

CONFIRMATORY FACTOR ANALYSIS
OF
THE PERSONAL ORIENTATION INVENTORY (POI)

by

Nicolè Stonefield

submitted in fulfilment of the requirements
for the degree of

Master of Commerce

in the subject

Industrial Psychology

at the

University of South Africa

Supervisor: Dr P Koortzen

November 1999

ACKNOWLEDGMENTS

I would like to express my appreciation and thanks to

- * Prof Frans Cilliers for his guidance, support and encouragement. As well as for his valuable help in teaching me to "grow"
- * Dr Pieter Koortzen for his role as supervisor
- * Prof Mike Watkins for his input regarding statistical analysis
- * My parents for giving me the opportunity to grow
- * My husband, family and friends for their understanding and encouragement in my growth process.

STATEMENT

I declare that this dissertation: **"Confirmatory Factor Analysis of the Personal Orientation Inventory (POI)"** is my own work and that all sources that I have used or quoted have been indicated and acknowledged by means of complete references.

N STONEFIELD

Student number: 789-675-1

155.283 STON



0001761040

TABLE OF CONTENTS

| | |
|-----------------|----|
| ACKNOWLEDGMENTS | i |
| STATEMENT | ii |
| LIST OF TABLES | ix |
| LIST OF FIGURES | x |
| SUMMARY | xi |

CHAPTER 1 SCIENTIFIC ORIENTATION OF THE RESEARCH

| | | |
|---------|-----------------------------------------------|----|
| 1.1 | BACKGROUND AND MOTIVATION FOR THE RESEARCH | 1 |
| 1.2 | PROBLEM STATEMENT | 5 |
| 1.2.1 | Questions relating to the literature review | 6 |
| 1.2.2 | Questions relating to the empirical study | 7 |
| 1.3 | AIMS OF THE RESEARCH | 7 |
| 1.3.1 | General aims | 7 |
| 1.3.2 | Specific aims | 7 |
| 1.4 | RESEARCH MODEL | 8 |
| 1.5 | THE PARADIGMATIC PERSPECTIVE FOR THE RESEARCH | 12 |
| 1.5.1 | Relevant paradigms | 13 |
| 1.5.1.1 | Paradigms used in the literature review | 14 |
| 1.5.1.2 | Paradigms used for the empirical study | 14 |
| 1.5.1.3 | Disciplinary context | 15 |
| 1.5.2 | Metatheoretical statements | 15 |
| 1.5.3 | The market of intellectual resources | 16 |
| 1.5.3.1 | Theoretical statements of the research | 17 |
| 1.5.3.2 | Methodological beliefs | 18 |

| | | |
|------------|-------------------------------------------|-----------|
| 1.6 | RESEARCH DESIGN | 18 |
| 1.6.1 | Validity | 19 |
| 1.6.2 | Reliability | 20 |
| 1.6.3 | Validity and reliability in this research | 21 |
| 1.7 | RESEARCH METHOD | 22 |
| 1.8 | SUMMARY | 25 |

CHAPTER 2 SELF-ACTUALIZATION

| | | |
|------------|----------------------------------------------------------------------|-----------|
| 2.1 | HISTORICAL DEVELOPMENT | 26 |
| 2.2 | CONCEPTUALISATION | 27 |
| 2.2.1 | Humanistic viewpoints | 27 |
| 2.3 | COMPARISON OF THE CONCEPTUALISATION OF SELF-ACTUALIZATION | 33 |
| 2.3.1 | Actualizing tendency | 33 |
| 2.3.2 | Motivations | 34 |
| 2.3.3 | Self-concept | 34 |
| 2.3.4 | Self-fulfilment | 35 |
| 2.3.5 | Fully functioning individual | 36 |
| 2.4 | DIMENSIONS OF THE CONCEPTUALISATION OF SELF-ACTUALIZATION | 37 |
| 2.4.1 | Full potential | 37 |
| 2.4.2 | Optimal development | 37 |
| 2.4.3 | Actualizing tendency | 38 |
| 2.4.4 | Motivations | 39 |
| 2.4.5 | Self-actualizing values | 40 |

| | | |
|------------|---------------------------------------------------------------------|-----------|
| 2.5 | CRITICISM OF SELF-ACTUALIZATION | 41 |
| 2.5.1 | Criticism of the theory of self-actualization | 41 |
| 2.5.2 | Criticism of the theorists of self-actualization | 42 |
| 2.5.3 | Critical evaluation of the different views of self-actualization | 44 |
| 2.6 | PERSONALITY CHARACTERISTICS | 45 |
| 2.6.1 | Allport | 45 |
| 2.6.2 | Fromm | 47 |
| 2.6.3 | Rogers | 49 |
| 2.6.4 | Frankl | 50 |
| 2.6.5 | Perls | 50 |
| 2.6.6 | Maslow | 51 |
| 2.6.7 | Distinguishing characteristics of a self-actualizing individual | 60 |
| 2.7 | PERSONALITY PROFILE | 62 |
| 2.7.1 | Intrapersonal behaviour | 63 |
| 2.7.2 | Interpersonal behaviour | 64 |
| 2.8 | SUMMARY | 65 |

CHAPTER 3 THE PERSONAL ORIENTATION INVENTORY (POI)

| | | |
|------------|-------------------------------------------|-----------|
| 3.1 | MEASUREMENT OF SELF-ACTUALIZATION | 66 |
| 3.2 | THE PERSONAL ORIENTATION INVENTORY | 68 |
| 3.2.1 | Development of the POI | 68 |
| 3.2.2 | Rationale of the POI | 69 |
| 3.2.3 | Description of the POI | 70 |
| 3.2.4 | Scales of the POI | 70 |

| | | |
|------------|-----------------------------------------------------------|-----------|
| 3.2.5 | Administration of the POI | 74 |
| 3.2.6 | Interpretation of the POI | 75 |
| 3.2.7 | Validity of the POI | 76 |
| 3.2.8 | Reliability of the POI | 78 |
| 3.3 | PREVIOUS RESEARCH | 80 |
| 3.3.1 | Faking | 80 |
| 3.3.2 | Interrelationships | 81 |
| 3.3.3 | Factorial studies | 82 |
| 3.3.4 | Critical analysis of existing reliability and validity | 83 |
| 3.4 | SUMMARY | 84 |

CHAPTER 4 THE APPLICABILITY OF SELF-ACTUALIZATION AND THE POI WITHIN INDUSTRIAL PSYCHOLOGY

| | | |
|------------|-------------------------------------------------------------------------|-----------|
| 4.1 | THE APPLICABILITY OF SELF-ACTUALIZATION | 86 |
| 4.1.1 | Self-actualization within the workplace | 86 |
| 4.1.2 | Organisational leadership and management | 89 |
| 4.1.3 | Independence from the external environment | 90 |
| 4.1.4 | Metamotivations | 92 |
| 4.2 | THE APPLICABILITY OF THE POI | 95 |
| 4.3 | APPLICABILITY OF SELF-ACTUALIZATION IN INDUSTRIAL PSYCHOLOGY | 96 |
| 4.3.1 | Organisational development | 96 |
| 4.3.2 | Career development | 97 |
| 4.3.3 | Employment development | 97 |
| 4.4 | SUMMARY | 98 |

CHAPTER 5 EMPIRICAL STUDY

| | | |
|------------|---------------------------------------------------------------------------|------------|
| 5.1 | EMPIRICAL OBJECTIVES | 99 |
| 5.2 | STEP 1: SELECTION AND DESCRIPTION OF THE POPULATION AND SAMPLE | 99 |
| 5.2.1 | Age distribution | 100 |
| 5.2.2 | Gender | 100 |
| 5.3 | STEP 2: DISCUSSION AND MOTIVATION OF THE MEASURING INSTRUMENT | 101 |
| 5.4 | STEP 3: DATA COLLECTION | 101 |
| 5.5 | STEP 4: DATA ANALYSIS | 101 |
| 5.5.1 | Standardisation | 103 |
| 5.5.2 | Factor analysis | 103 |
| 5.6 | FORMULATION OF HYPOTHESES | 108 |
| 5.7 | SUMMARY | 110 |

CHAPTER 6 RESEARCH RESULTS

| | | |
|------------|---------------------------------------|------------|
| 6.1 | DESCRIPTIVE STATISTICS | 112 |
| 6.2 | EXPLORATORY FACTOR ANALYSIS | 113 |
| 6.2.1 | Factor analysis with verimax rotation | 113 |
| 6.2.2 | Communiality estimates | 115 |
| 6.2.3 | Reliability of the measures | 117 |
| 6.3 | CONFIRMATORY FACTOR ANALYSIS | 117 |
| 6.4 | HYPOTHESES | 122 |
| 6.5 | SUMMARY | 123 |

CHAPTER 7 CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

| | | |
|---------------------------------|----------------------------------------------------|------------|
| 7.1 | CONCLUSIONS | 124 |
| 7.1.1 | Conclusions relating to the literature review | 124 |
| 7.1.2 | Conclusions relating to the empirical study | 125 |
| 7.1.3 | General conclusion | 126 |
| 7.2 | LIMITATIONS | 126 |
| 7.2.1 | Limitations of the literature review | 126 |
| 7.2.2 | Limitations of the empirical study | 127 |
| 7.3 | RECOMMENDATIONS | 127 |
| 7.3.1 | Recommendations regarding the literature review | 127 |
| 7.3.2 | Recommendations regarding the empirical study | 128 |
| 7.3.2.1 | Cultural diversity | 128 |
| 7.3.2.2 | Standardised instruments | 129 |
| 7.4 | SUMMARY | 129 |
| LIST OF REFERENCES | | 130 |
| APPENDIX: LISREL RESULTS | | 139 |

LIST OF TABLES

| | | |
|------------|----------------------------------------------------|-----|
| TABLE 1.1 | Chapter division | 25 |
| TABLE 3.1 | Test-retest reliability coefficients for POI | 79 |
| TABLE 3.2 | Test-retest reliability coefficients of the POI | 80 |
| TABLE 3.3 | Intercorrelational matrix for the POI (n=138) | 82 |
| TABLE 5.1 | Age distribution | 100 |
| TABLE 5.2 | Gender distribution | 100 |
| TABLE 6.1 | Raw scores using the SAS System | 113 |
| TABLE 6.2 | Rotated factor pattern | 114 |
| TABLE 6.3 | Final communalities estimates | 116 |
| TABLE 6.4 | Variance explained by each factor | 116 |
| TABLE 6.5 | The reliability of the measures | 117 |
| TABLE 6.6 | Pearson's correlation coefficients | 117 |
| TABLE 6.7 | Correlation analysis for seven "VAR" variables | 118 |
| TABLE 6.8 | Correlation analysis for two "VAR" variables | 118 |
| TABLE 6.9 | Correlation analysis for three "VAR" variables | 119 |
| TABLE 6.10 | Data entered into LISREL | 120 |

LIST OF FIGURES

| | | |
|------------|------------------------------------------------|-----|
| FIGURE 1.1 | Research model | 9 |
| FIGURE 1.2 | A paradigmatic model | 13 |
| FIGURE 2.1 | Characteristics of self-actualizing individual | 62 |
| FIGURE 6.1 | A confirmatory factor model | 121 |

SUMMARY

CONFIRMATORY FACTOR ANALYSIS
OF
THE PERSONAL ORIENTATION INVENTORY (POI)

BY

NICOLÈ STONEFIELD

SUPERVISOR: DR P KOORTZEN
DEGREE: M COM
SUBJECT: INDUSTRIAL PSYCHOLOGY

A survey of the field revealed a need for a Confirmatory Factor Analysis of the Personal Orientation Inventory (POI). The two major objectives were to understand the concept of self-actualization and the use of the POI as a measuring instrument. The POI correlation coefficients were used as input data for the computer program, Linear Structural Relations (LISREL), to perform a Confirmatory Factor Analysis.

A sample of 495 individuals was used in this research. This sample consisted of both male and female second-year Industrial Psychology students from various race groups.

The research concluded that the Root Mean Square Error of Approximation (RMSEA) indicated a poor fit between the empirical model and the empirical reality. This determined that the POI's factor structure could not confirm the theoretical model of self-actualization.

It is acknowledged that more research needs to be conducted, taking due consideration of bias variables and cultural diversity.

KEY TERMS:

Confirmatory Factor Analysis, self-actualization, Personal Orientation Inventory (POI), Linear Structural Relations (LISREL).

CHAPTER 1 SCIENTIFIC ORIENTATION OF THE RESEARCH

This dissertation focuses on the Personal Orientation Inventory (POI), concentrating on an understanding of the concept of self-actualization, and thus facilitates a Confirmatory Factor Analysis of the Personal Orientation Inventory. This chapter contains the scientific orientation of the research, with reference to background and motivation; the problem statement; the aims of the research; a research model; a paradigmatic perspective for the research; the research design as well as a description of the research methods used.

1.1 BACKGROUND AND MOTIVATION FOR THE RESEARCH

In the field of industrial psychology, motivation plays a significant role in the explanation of an individual's behaviour. Many theories of motivation have been based on the concept of needs. Saal and Knight (1988, p. 260) summarise these need theories as stating that the goal of motivated behaviour is to eliminate or satisfy a need to restore equilibrium. Maslow developed one of the initial need theories of human motivation.

The focus of this dissertation will be on Maslow's theory of self-actualization as this theory illustrates the meaning and conceptualisation of self-actualization as seen in humanistic psychology. There are many sources of literature to illustrate Maslow's theory of self-actualization.

According to Harbaugh (1993, p. 2), Maslow (1954) maintained that an individual's basic needs function in a hierarchical order. This hierarchy of needs can be divided into five different levels and, accordingly, the needs on these levels can be identified as physiological needs, needs for security, love and esteem, and self-actualization needs. However, the satisfaction of these

needs does not necessarily occur in a structured and ordered way.

Maslow considered self-actualization to be the highest and most complex need in the hierarchy. This need includes the desire to be everything that one is capable of being, to develop one's potential to the full and to assist others in reaching full development (Harbaugh, 1993, p. 4).

Self-actualization is a concept that is often used vaguely. It can be associated with other factors. Jahoda (1958, cited in Jones & Crandall, 1991, p. 130) associates growth, self-concept and development with self-actualization.

In Bhagyavathy (1991, p. 15), humanistic psychology is part of a third force in contemporary psychology. It focuses on the exploration of various aspects of individual behaviour. Some of these aspects are self-growth, higher values, being, becoming and self-actualization.

McClelland (1985) studied the origins of achievement motivation and its occurrence across different societies. The need theory that he developed has been successful in generating research aimed at a better understanding of human social behaviour (Buskist & Gerbing, 1990, p. 340).

The concept of self-actualization is central to humanistic psychology. The authors below illustrate how self-actualization influences industrial psychology.

McCormick and Ilgen (1982) define industrial psychology as the scientific study of human behaviour in the production, distribution and consumption of the goods and services of society. Industrial psychology is an applied science that also provides practical guidelines to predict and control behaviour in order to ensure efficiency and human welfare.

Rowan (1983, pp. 9-15) wrote an article on the concept of self related to a mystical experience. He maintained that the concept of self-actualization is central to humanistic psychology. However, Rowan (1983) questioned what the self requires in order to be actualized. Maslow described actualization as easily attained through peak experiences. It is fundamentally transcendent, and attaining this stage is similar to a mystical experience. This answers Rowan's question (1983) about what the self requires in order to be actualized. Peak experiences involve the mystical self, the actualized self.

If a peak experience is reached through self-development, it will be experienced in a positive, transcendent way. According to Maslow, self-actualization means that one has to work to do well in the things that one wants to do. This means giving up one's defences. Rowan believes that this refers to a stage of the existential self (Rowan, 1983, pp. 9-15).

Das (1989, pp. 13-15) agreed with Rowan (1983) that self-actualization is a key concept in humanistic psychology. It illustrates the process of personal growth and healthy development.

In his article "Beyond Self Actualization", Das (1989, pp. 13-15) looked at the philosophical roots of Maslow's theory. Maslow was trained as an experimental psychologist. His early research was done within the framework of behavioural psychology and later he took up a strongly organismic position, which explains the growth and development of behaviour in terms of innate biological forces. In Maslow's later work, he was concerned with the nature of psychological health and human potential. This illustrates his view of self-actualization.

Bhagyavathy (1991, pp. 15-22) defined humanistic psychology as an orientation toward the whole of psychology rather than a distinctive part. It involves regard for the worth of another individual, respect for different approaches, open-mindedness and

exploring new features of human behaviour. It is a *third force* in contemporary psychology which includes topics that are insignificant in existing theories, such as self-actualization, creativity, growth, higher values and peak experiences. Humanistic psychology explores methods to deepen and improve human experience. Maslow's study of further potentialities (1967) is typical of this perspective.

Within the humanistic perspective, a self-actualizing individual is described as autonomous, self-supportive and oriented. This individual combines the Freudian dichotomies and trichotomies. A self-actualizing individual can enjoy general emotional experiences and peak experiences (Bhagyavathy, 1991, pp. 15-22).

De Carvalho (1990, pp. 38-39) theorised that human nature is the most significant feature of humanistic psychology. Humanistic psychologists describe the nature and methods of psychology and criticise behaviourism and psycho-analysis. This view determines the objectives of empirical research, the gathering and interpretation of evidence as well as the construction of theories.

Humanistic psychologists share the conviction that an individual is a *being-in-the-process-of-becoming*. Each individual takes responsibility for his or her own existence.

According to Maslow, to reach the highest levels through the process of becoming, the self must be spontaneously integrated and actualized (De Carvalho, 1990, pp. 38-39).

Daniels (1988, pp. 11-12) consulted with many individuals about self-actualization. Some were amused, others were critical. There was also a third group who immediately grasped the concepts and terms of humanistic psychology. These individuals believed that humanistic theories refer to relevant personal issues. The theory of self-actualization may be more like a living personal ideology than a set of dry academic propositions.

Daniels (1988, pp. 19-20) states that self-actualization is evidently one of the most optimistic and life affirming concepts ever introduced within psychology. It is seen as extending human horizons, promising ultimate personal fulfilment and encouraging one to move toward an ideal state of being. Daniels (1988) maintained that such idealism is an easy target for dismissal.

Buss (1979, pp. 43-54) hypothesised that humanistic psychology and Maslow's theory of self-actualization have their origin in liberalism. This article by Buss (1979) looks at the social-historical roots of Maslow's theory of self-actualization. He believed that individual development and self-actualization has been taken over by government, and industrial and organisational psychologists. Maslow's theory of self-actualization is a psychological portrayal of the liberal frame of mind that stresses optimism, individual freedom and the gradual development toward perfection.

In order to assess the psychological optimality of an individual, one needs to consider assessment techniques or psychological tests. According to Knapp (1976, pp. 1-2), Shostrom's (1974) Personal Orientation Inventory (POI) is one assessment technique that was developed to facilitate empirical research for the measurement of self-actualization. This instrument has stimulated extensive research into humanistic concepts and theory. The POI was developed to meet the need for objective measurement of values and behaviours that are important for the development of a self-actualizing individual.

1.2 PROBLEM STATEMENT

Mouton and Marais (1994, pp. 192) state that the core concepts of the problem need to be clearly defined and can be used in empirical research.

McCormick and Ilgen (1989, pp. 271) describe self-actualization as a need for realising one's own potential and for continuous self-development. One point that stands out in various sources and references is the fact that self-actualization is seldom fully attained.

Knapp (1976, p. 2) maintained that the POI presented an easy way of measuring humanistic characteristics of the self-actualizing individual.

Although Knapp (1976) suggests the use of the POI, the construct validity of the POI has not been sufficiently researched and it is therefore unclear if the POI is a valid operationalisation of the theory on self-actualization.

This research focuses on the Personal Orientation Inventory (POI) by using the theory of self-actualization to conduct a Confirmatory Factor Analysis.

In order to conduct this research, the questions listed in the following sections were formulated to structure the literature review and empirical study.

1.2.1 Questions relating to the literature review

1. How is self-actualization conceptualised?
2. What are the characteristics of a self-actualizing individual?
3. What is the personality profile of a self-actualizing individual?
4. How can the Personal Orientation Inventory (POI) be used as a measuring instrument of self-actualization?

5. How can self-actualization and the Personal Orientation Inventory (POI) be applied to Industrial Psychology?

1.2.2 Questions relating to the empirical study

1. What does a Confirmatory Factor Analysis of the POI reveal about its factor structure?
2. What can Industrial Psychology gain from this research?

1.3 AIMS OF THE RESEARCH

The aims of this research can be formulated as follows:

1.3.1 General aims

The general aim of this research is to determine whether the Personal Orientation Inventory's factor structure confirms the theoretical model of self-actualization.

1.3.2 Specific aims

The specific aims of the literature review are as follows:

- * To conceptualise self-actualization by examining the characteristics and personality profile of a self-actualizing individual as described in the literature.
- * To formulate arguments for the inclusion of the POI as a measuring instrument of self-actualization.
- * To determine the applicability of self-actualization and the POI in Industrial Psychology.

The specific aims of the empirical study include:

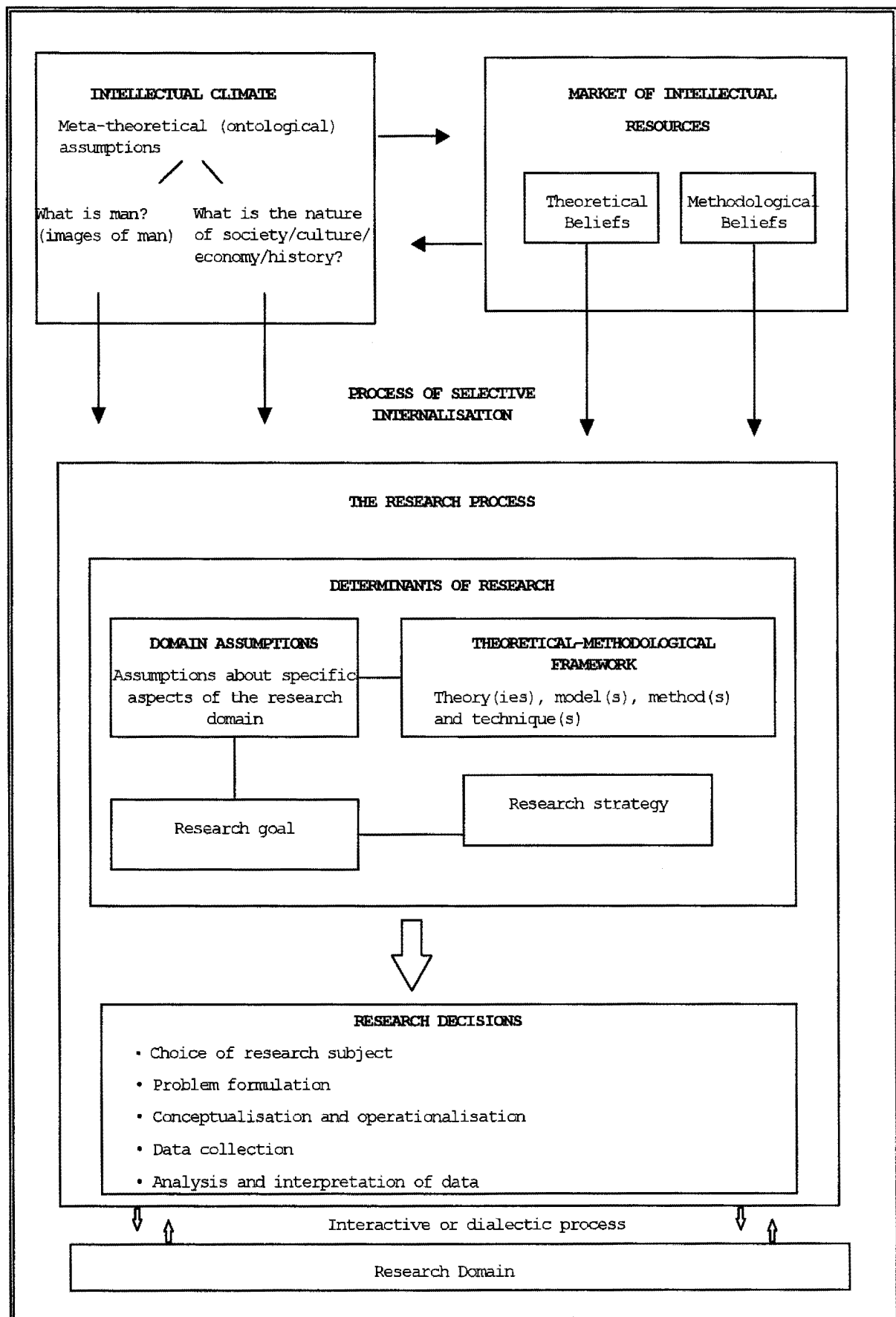
- * To determine the outcome of a Confirmatory Factor Analysis of the Personal Orientation Inventory.
- * To formulate conclusions and recommendations for future measurement of self-actualization by means of the POI within Industrial Psychology.

1.4 RESEARCH MODEL

Mouton and Marais (1994, pp. 7-23) present this model as an approach to interpreting the process of research in the social sciences.

Social science is defined as "a collaborative human activity in which social reality is studied objectively to gain a valid understanding of it". In this definition, five dimensions of social science research are stressed. These include sociological, ontological, teleological, epistemological and methodological dimensions (Mouton & Marais, 1994, p. 7).

FIGURE 1.1 An integrated model of social sciences research (Mouton & Marais, 1994:22)



According to Mouton and Marais (1994, p. 8), the sociological dimension is the central component in any analysis of what science is about. Scientific research is an activity consisting of teamwork and joint effort.

In order to make use of the POI, one needs to operate within a clearly defined scientific community. For this dissertation empirical research was conducted using second-year Industrial Psychology students.

Points to remember regarding research subjects are the following:

- The rights of the research candidates must be taken into account.
- Testing must be conducted according to approved values, morals and ethics of society.
- Professional conduct is essential to ensure that these regulations are adhered to.

The ontological dimension of research refers to social reality, which differs from person to person. When using the POI for individuals, the diversity of human characteristics, activities and behaviour should be taken into account (Mouton & Marais, 1994, p. 11).

Mouton and Marais (1994, p. 13) maintain that a teleological dimension refers to the practice of research as goal-directed. Research goals include exploratory, descriptive and explanatory studies. The goal of this research is to conduct a Confirmatory Factor Analysis on the POI.

The epistemological dimension represents not only the need to understand phenomena but also the need to formulate valid explanations for reality. It represents the quest for truth.

When conducting a Confirmatory Factor Analysis on the POI, statements produced need to be logical, concise, probable and confirmed. The findings should be as close to reality as possible

to ensure the validity of the research. Consequently, there is a need for conclusive verification (Mouton & Marais, 1994, p. 14).

The methodological dimension is based on the hypothesis that the research must be as objective as possible. As a result findings should be balanced, unbiased, systematic and controllable (Mouton & Marais, 1994, p. 15).

When investigating whether a Confirmatory Factor Analysis can be conducted on the POI, certain methods will be used to plan and structure the research to ensure objectivity.

The five dimensions discussed above, namely, the sociological, ontological, teleological, epistemological and methodological dimensions, are interdependent. Within the framework of the research process, the idea is that research that occurs in each dimension is conducted according to the disciplinary context, the paradigmatic context and the research project (Mouton & Marais, 1994, p. 16).

This research model is described as a system theoretical model, with three subsystems, representing an intellectual climate, the market of intellectual resources and the research process itself. These subsystems interrelate with each other and with the research domain of the scientific discipline. For the purposes of this research, the scientific discipline is industrial psychology.

Mouton and Marais (1994, p. 20) describe *intellectual climate* as a variety of metatheoretical values or beliefs. For this research these assumptions are formulated with respect to beliefs about industrial psychology, humanistic psychology and the theory of self-actualization.

The markets of intellectual resources refer to the collection of beliefs. These beliefs have a direct bearing upon the

epistemological status of scientific standards. There are two major types of intellectual resources: one being theoretical beliefs about the nature and structure of the research process, the second type including the methodological beliefs about the nature and structure of the research process (Mouton & Marais, 1994, p. 21).

For the purpose of this research, a central hypothesis is presented as well as theoretical models, theories and a conceptual description. In the research process, the research internalises specific inputs from the paradigm(s) which is(are) subscribed to selectively. This enables the researcher to interact with the research domain and produce scientifically valid research. A distinction is made between the research decisions and the decision-making process (Mouton & Marais, 1994, p. 23).

The decision-making steps in the research process do not necessarily need to follow a rigid sequence. However, Mouton and Marais (1994, p. 24) maintain that it should include five typical stages. These are the following: choosing a research topic or theme; formulating the research problem; conceptualising; data collection; and analysis and interpretation of data.

The research aims are formulated with regard to two phases: the literature review and the empirical study. For the purpose of this research, phase one refers to the conceptualisation of self-actualization and the applicability of the POI within industrial psychology. Phase two refers to the Confirmatory Factor Analysis of the Personal Orientation Inventory.

1.5 THE PARADIGMATIC PERSPECTIVE FOR THE RESEARCH

With reference to the paradigmatic perspective, the following are discussed: relevant paradigms; metatheoretical statements and the market of intellectual resources.

FIGURE 1.2 *The Paradigmatic Model*

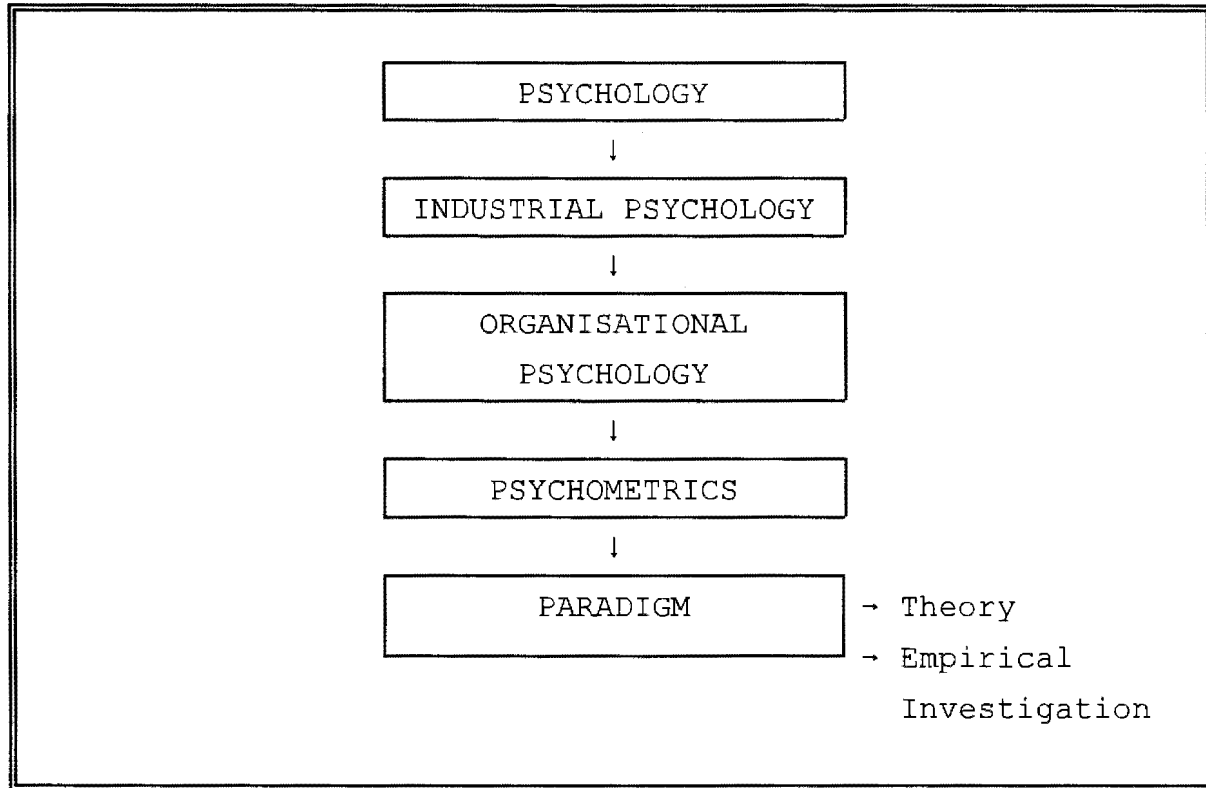


Figure 1.2 illustrates a paradigmatic perspective of the investigation into self-actualization. The concept of self-actualization falls into the category of psychology. However, in this investigation, it is approached from the point of view of industrial psychology. This should enable one to determine the applicability of the POI within industrial psychology.

1.5.1 Relevant paradigms

Morgan (1980, p. 606) states that a paradigm is used in a "meta-theoretical or philosophical sense to denote an implicit or explicit view of reality". Kuhn (1970) reduced the paradigm definition to three broad meanings: as a complete view of reality; as relating the social organisation of science in terms of schools of thought concerned with particular kinds of scientific achievements; and as relating to the concrete use of

specific kinds of tools and texts for the process of scientific puzzle solving (Morgan, 1980, p. 606).

1.5.1.1 *Paradigms used in the literature review*

Thematically, the literature review will be on the conceptualisation of self-actualization and the POI. For the purpose of this research, it will be presented from the view of humanistic psychology.

a Humanistic Psychology

Cox (1970, cited in Maslow 1970, p. 248) describes humanistic psychology as revolutionary because it presents a positive model of human experience. Morgan (1980, p. 605) views the humanistic approach as part of third force psychology.

Humanism views individuals as responsible with free choice, and involved in a dynamic and continuous process where they try to discover their potential and become their own person (Morgan, 1980, p. 608). An individual needs to be seen as an integrated whole, participating in the determination of his or her own behaviour. An individual determines his or her own possibilities during self-actualization. The emphasis of psychic wellbeing in the measurement of human functioning is important for the concept of self-actualization within the context of industrial psychology.

1.5.1.2 *Paradigms used for the empirical study*

The empirical study is presented using a functionalistic paradigm. Psychometrics is used to conduct a Confirmatory Factor Analysis of the POI.

a Functionalistic paradigm

According to Morgan (1980, p. 608-609), the functionalist paradigm assumes that society is concrete, systematic and provides an ordered and regulated way of life. It focuses on the role of the individual within society. An individual's behaviour is influenced by the norms and culture of society. Accordingly, an individual's ability to reach self-actualization is determined by society. The functionalist perspective enables one to understand society in order to gain useful empirical knowledge.

b Psychometrics

One needs to use psychometrics in order to understand the concept of self-actualization and evaluate whether individuals realise their full potential. The population and sample should be established with the use of psychometrics, using the POI as the measuring instrument.

The traditional psychometric approach states that a psychological test measures an individual's characteristics and the scores he or she obtains can be used to predict how this candidate will function in practically any situation (Meyer, Moore & Viljoen, 1993, p. 239)

1.5.1.3 Disciplinary context

In the disciplinary context, this research focuses on psychology and industrial psychology as fields of application. The literature review focuses on the conceptualisation of self-actualization in order to conduct the POI on the respondents. In terms of the empirical study, the focus is on psychometrics and statistical analysis.

1.5.2 Metatheoretical statements

The metatheoretical assumptions represent assumptions underlying

the theories, models and paradigms that form the definitive context of the study (Mouton & Marais, 1994, p. 192).

Three paradigms that are related to this research are psychology, industrial psychology and organisational psychology.

a Psychology

Buskist and Gerbing (1990, p. 2) define psychology as the "scientific study of the behavior and cognitive process of individual organisms". They see the goal of psychology as the description, understanding, prediction and control of behaviour.

b Industrial Psychology

Schultz (1982, cited in Saal & Knight, 1988, p. 7) views industrial psychology as "the application of methods, facts and principles of the science of human behavior at work".

c Organisational Psychology

Organisational psychology can be seen as an interaction of individuals within a complex situation. The understanding of this process enables one to have a positive contribution, outlook and feeling in one's organisational role (Bass & Ryterband, 1979, p. 3).

Metatheoretical values or beliefs have become part and parcel of the intellectual climate of a particular discipline in social science (Mouton & Marais, 1994, p. 21).

Personality is measured as metatheory in chapter 3.

1.5.3 The market of intellectual resources

The market of intellectual resources refers to a collection of beliefs. These beliefs have a direct bearing on the determination

of the concept of self-actualization and its part in the Confirmatory Factor Analysis of the POI. There are two major types of intellectual resources: theoretical concepts and methodological beliefs (Mouton & Marais, 1994, p. 21).

1.5.3.1 Theoretical statements of the research

Theoretical beliefs involve descriptive and interpretative views of human behaviour. These beliefs include statements that form part of hypotheses, typologies, models and theories (Mouton & Marais, 1994, p. 21).

Robbins (1991, p. 192) defines motivation as the willingness to exert high levels of effort in order to reach organisational goals, provided that some individual needs are also satisfied.

Maslow's (1970) theory of motivation suggests that there are five categories of needs that are hierarchically arranged. Each level is prepotent to the next, higher level (Mathes 1981, p. 69).

The concept of self-actualization is to become capable of achieving what an individual is capable of becoming. Self-fulfilment is the need to realise one's own potential and achieve self-development (McCormick & Ilgen, 1985, p. 271).

One needs to be aware of metatheoretical principles in order to understand the theory of self-actualization. These dimensions include self-awareness, self-growth, self-fulfilment and self-concept.

Rogers (1959) describes self-awareness as a symbol of one's personal experience. Cosini (1977) believes growth to be

conceptually at the core of most approaches to self-actualization (Jones & Crandall, 1991, pp. 23, 252).

Bhagyavathy (1991, p. 29) restates Maslow concept of self-actualization as an individual's desire for self-fulfilment. This is the potential to become what one is capable of becoming.

Self-concept is shown to be the most prominent aspect of the individual's phenomenal world as well as its most stable feature (Fitts, 1971, p. 3).

In order to understand the concept of Maslow Theory, it must be compared with other views of motivation theories and need theories. These include Equity Theory (Adams, 1965), Two Factor Theory (Hertzberg, 1959), Need for Achievement (McClelland, 1961 and Atkinson, 1957) and the Expectancy Theory (Vroom, 1964).

1.5.3.2 *Methodological beliefs*

These include beliefs that concern the nature of social science and scientific research. They include quantitative and qualitative models, enabling one to conduct well-rounded research (Mouton & Marais, 1994, p. 23).

As mentioned previously, the use of psychometrics enables one to study the concept of self-actualization by completing a Confirmatory Factor Analysis of the Personal Orientation Inventory.

1.6 **RESEARCH DESIGN**

Selltiz (1965, cited in Mouton & Marais, 1994, p. 32) defined research design as the "arrangement of conditions for collection and analysis of data in a way that aims to combine relevance to the research purpose with economy in procedure".

Research design enables one to make rational decisions during the research process. It aims to provide answers to research questions and ensure that the results of the investigation are

valid, objective and accurate. In this research, it should enable one to ensure that the findings of the Confirmatory Factor Analysis are as constant and accurate as possible (Kerlinger, 1986, p. 280).

The type of research goals and strategy should be established. Mouton and Marais (1994, p. 42) distinguish between three types of research goals. These include exploratory research, descriptive research and explanatory research.

In terms of the literature review and empirical study, this research can be categorised as exploratory. The goal pursued in exploratory research is the examination of a relatively unknown research area, which usually leads to insight and comprehension rather than the collection of accurate and replicable data. Hypotheses tend to be developed as a result of such research rather than the research being guided by the hypotheses (Mouton & Marais, 1994, pp. 42-46).

In order to ensure that the findings of the Confirmatory Factor Analysis are constant and accurate, one needs to consider that with any type of measurement, there are two factors that are particularly relevant: validity and reliability.

1.6.1 Validity

According to Mouton and Marais (1994, p. 33), the "aim of a research design is to plan and structure a given research project in such a manner that the eventual external and internal validity of the research findings is maximized".

By using an efficient research design, the investigator plans to maximise an experimental variance, control extraneous variables and minimise an error variance (Kerlinger, 1986, p. 280).

Internal and external validity are the two general criteria of research design. Internal validity includes aspects that affect

the control of the design. External validity refers to the representativeness or generalisation of the findings (Mouton & Marais, 1994, p. 50).

According to Anastasi (1990, p. 28) validity refers to "a judgement concerning how well a test does in fact measure what it purports to measure". Tests may be used to achieve different objectives, which then require assessment for different types of validity. Three fundamental categories of validity are content validity, whether or not the test is criterion related, and construct validity.

Bartram (1990, p. 77) believes that the content validity of a test refers to the "degree to which a test measures what it is supposed to measure judged on the appropriateness of the content". Thus, each item must be judged for its presumed relevance to the aspect being measured.

According to White and Speisman (1982), "criterion validity is established by procedures designed to determine the relationship of test responses to criteria external to the test". This means that it refers to the accuracy with which the test will forecast the future behaviour or status of the individual.

Cohen (1988, p. 128) defines construct validity as a "judgement about the appropriateness of inferences drawn from test scores regarding individual standings at a certain kind of variable called a construct". If the test is a valid measure of the construct, the high and low scores will behave as predicted by the theory.

1.6.2 Reliability

Mouton and Marais (1993, p. 79) believe that the main consideration of validity in the process of data collection is that of reliability. Reliability requires that the application of a valid measuring instrument to different groups under

different sets of circumstances should result in the same observation.

According to Smit (1986), there are four methods that are used for estimating the reliability of tests (Ghiselli, 1964). These methods estimate reliability in the following ways:

- from the coefficient of correlation between scores on repetitions of the same test
- from the coefficient of correlation between scores on parallel forms of a test
- from the coefficient of correlation between scores on comparable parts of the test
- from intercorrelation among the elements of a test

1.6.3 Validity and reliability in this research

In this research the POI was applied to a total sample of 495 subjects in order to establish the means, standard deviations and intercorrelations among scores on various scales.

In order to conduct a Confirmatory Factor Analysis of the Personal Orientation Inventory, one had to obtain a sample in the investigation in order to determine how individuals use their potential to reach self-actualization and self-fulfilment. For this research, findings are only valid and reliable if models, theories and instruments are used in a standardised way. Internal validity is ensured with the use of internal control. All the collected data from the administration of the POI were scored via a computer program. A computer was used to evaluate and tabulate the results of the Personnel Orientation Inventory, external validity was assured by making use of computer experts.

Psychometric procedures ensure validity and reliability to comply with the general and specific aims set out in this research.

1.7 RESEARCH METHOD

The research method was be administrated in two phases: phase one represents the literature review and phase two, the empirical study.

The following flow chart illustrates the steps involved in this research project.

FLOW CHART

Phase 1: Literature review

- Step 1** The conceptualisation of self-actualization and the review of the characteristics and personality profile of a self-actualizing individual.
- Step 2** The Personal Orientation Inventory as a measurement of self-actualization.
- Step 3** The applicability of self-actualization and the POI within industrial psychology.

Phase 2: Empirical study

- Step 1** Selection and description of the population and sample.
- Step 2** Discussion of and motivation for using the measuring instrument.
- Step 3** Data collection.
- Step 4** Data analysis.
- Step 5** Report and interpretation of results in tabular form.
- Step 6** Formulation of a conclusion according to set aims.
- Step 7** Limitations of the research.
- Step 8** Recommendations regarding the research.
-
-

The research is divided into two sections and seven chapters.

Chapter two focuses on the conceptualisation of self-actualization within humanistic psychology. The characteristics and personality profile of a self-actualizing individual are presented within a generally accepted psychometric framework.

Chapter three contains a discussion of the various measuring instruments used for self-actualization with the emphasis on the Personal Orientation Inventory (POI). Attention is paid to the development and rationale of the POI. This includes a detailed description of the POI, including the scales, administration, interpretation as well as previous research conducted on this inventory. This includes a critical analysis of the existing research on the POI.

In chapter four there is a review of the applicability of self-actualization and the POI within industrial psychology. Attention is given to the roles that the POI and self-actualization play within the industry.

The empirical study is presented in chapter five as part of the exploratory research. The emphasis here is on the aims, the sample used, data collection and the data analysis.

Chapter six illustrates the results of the empirical study. The results of the research are reported in tabular form. The results are then interpreted and discussed. This illustrates the link to the theory as reviewed in the preceding chapters.

Chapter seven contains the conclusions, and lists limitations and recommendations.

The chapter division is illustrated in the table below.

Table 1.1 Chapter Division

This dissertation is divided into the following chapters:

CHAPTER 2: Self-actualization

CHAPTER 3: Personality Orientation Inventory (POI)

CHAPTER 4: The applicability of self-actualization and the POI
within industrial psychology

CHAPTER 5: Empirical study

CHAPTER 6: Research results

CHAPTER 7: Conclusion, limitations and recommendations

1.8 SUMMARY

In this chapter, the background and the motivation for the research was presented. The problem statement was identified and linked to the general and specific aims of the research. A paradigmatic perspective was discussed. The research design was outlined, covering reliability and validity, and methods to be used for the research.

CHAPTER 2 SELF-ACTUALIZATION

This chapter has two objectives, firstly to conceptualise self-actualization and, secondly, to distinguish between a self-actualizing individual and an individual who is not self-actualized. This is achieved by identifying the characteristics of a self-actualizing individual. The conceptualisation of self-actualization is viewed from the humanistic paradigm, by identifying substantial sources in the field, and more specifically from Maslow's theoretical perspective. This determines the personality profile of the self-actualizing individual.

2.1 HISTORICAL DEVELOPMENT

In order to move away from the study of behaviours that are negative, abnormal and related to ill-health, a new study field known as growth psychology (Schultz, 1977) or health psychology (Stone, 1979) was developed. This focuses on positive behaviour patterns and the full extent of human potential and is still a relatively new approach in the scientific field. Some pioneering work has been done by Walsh and Shapiro (1983) in "Beyond health and normality" (Cilliers, 1984, pp. 46-47).

According to Maslow (1954, 1971), the distinction between positive and negative is qualitatively (according to type) and quantifiably (in degree) observable. This implies that the personality traits of a psychologically unhealthy/abnormal individual will differ from the traits of a healthy/normal individual and, again, from the traits of a psychologically optimally functioning individual (Cilliers, 1984, p. 48).

Behaviour can be reviewed in terms of psychological health, normality and optimisation. The optimisation model demonstrates that the development of the individual can be optimised through growth counselling and awareness of human potential. According

to Schultz (1977), if the individual is psychologically enriched, there will be stimulation of growth and interpersonal contact with society (Cilliers, 1984, p. 48).

Optimisation, growth and enrichment can be linked to the work of Knapp (1976) in *Handbook for the Personal Orientation Inventory* which can be viewed as a significant objective of therapy and development (Cilliers, 1984, p. 48).

The optimisation model illustrates a parallel between the psychological management function and management development. This model demonstrates that the objective of management development is to facilitate opportunities to optimise the potential of the individual in order for the individual to experience personal growth (Cilliers, 1984, p. 48).

2.2 CONCEPTUALISATION

There are various definitions and descriptions of self-actualization. For the purpose of this research, the main focus is on the meaning and the relevance of the conceptualisation of self-actualization as seen in humanistic psychology.

2.2.1 Humanistic viewpoints

There are various relevant models within the declared paradigm (humanism) and theory (self-actualization). These include Allport, Fromm, Rogers, Goldstein, Frankl, Perls, Gestalt and, more specifically, Maslow.

2.2.1.1 Allport: The mature person

Allport (1961) believed that there were four requirements that a theory of motivation should meet. These requirements include the contemporaneity of motivation, the existence of many different types of motives, due consideration of the importance of cognitive processes and recognition of the concrete uniqueness

of motivating forces. Allport considered these four requirements when describing his own concept of motivation, known as functional autonomy (Schultz, 1986, pp. 201-202).

Functional autonomy states that a mature person's motives are not functionally related to past experiences where these motives might have appeared originally. In other words, they become independent of the original circumstances (Schultz, 1986, p. 202).

Allport's theory of motivation of the health personality includes the principle of mastery and competence. This states that a mature person is not satisfied to achieve at mediocre levels. This type of individual strives to perform as well as he or she can to obtain high levels of competencies and mastery in satisfying certain motives (Schultz, 1977, p. 12).

Allport's theory (1955) assumes that propiate (as explained in section 2.6.1) functioning is in the service of the highest development of an individual whereas satisfaction of biological needs merely ensures the physical survival of the individual (Maddi, 1980, p. 123).

Maslow and Allport believed that lower needs must be satisfied before higher needs can be experienced. Both agreed that self-actualization involves a subjective sense of self (Maddi, 1972, p. 162).

2.2.1.2 Fromm: the productive person

Fromm (Schultz, 1977, p. 47) depicts a healthy individual as an individual who loves fully, is creative, has developed powers of reason, is objective, possesses a strong sense of identity and is an agent of self and destiny.

Fromm (Schultz, 1977, p. 47) terms the healthy personality as productive orientation. This is a concept that is similar to

Maslow's self-actualized individual, and Allport's mature personality/productive orientation represents the fullest realisation of human potential. Productive means to use all of one's powers and potentialities. Orientation is a general attitude that encompasses intellectual, emotional and sensory responses to people, objects and events in the world as well as to oneself.

2.2.1.3 Rogers - the fully functioning individual

Rogers (Schultz, 1977, p. 26) hypothesised that the one functional need in his system of personality is to maintain, actualize and enhance all aspects of the individual. Human growth and development do not operate independently of the actualizing tendency. At the lower levels of motivation, the actualizing tendency is responsible for basic physiological needs involving water, food and air.

Rogers (Schultz, 1977, p. 26) defined self-actualization as the process of becoming oneself by developing one's unique physiological characteristics and potentialities. Rogers believed that self-actualization could be aided or hindered by experience and by learning, especially in one's childhood.

2.2.1.4 Frankl: the self-transcendent individual

Frankl (Schultz, 1977, pp. 110-111) hypothesises that the will to meaning is a fundamental motivation. The will to meaning is so powerful that it is capable of overshadowing all other human motivations. It is vital for psychological health and survival in extreme situations. There is no reason to continue living if one does not have meaning in life. The meaning of life differs from one individual to the next and even from one moment to the next.

Phillip, Watkins and Noll (1974, pp. 57-59) identify similarities and differences in the theoretical formulations between Maslow's

theory of self-actualization and Frankl's theory of self-transcendence. There is a difference in their descriptions of the relationship between self and the environment. Frankl believes that there is a relationship between the individual and the environment. The environment prompts an individual to seek objective meaning. Maslow emphasises the independence that a *fully functioning* individual has from the environment. The environment is seen as a domain for self-expression. Frankl emphasises the transcendent qualities of individuals. Maslow looked at the biological fulfilment of potentials. A hierarchy of needs must be satisfied in order for self-actualization to occur.

2.2.1.5 *Perls: the here-and-now person*

Perls' realisation that marks the essence of his Gestalt therapy is that " I had to take all the responsibility for my existence myself". Gestalt is a German word that implies a sense of wholeness or completeness (Schultz, 1977, pp. 122-124).

2.2.1.6 *Goldstein: the self-actualizing individual*

Goldstein (1934) saw the organism as a unit and recognised the drive for self-actualization as an organismic motivating factor. Self-actualization continuously prompts the organism to make progress through the course of life (Massey, 1981, p. 305).

2.2.1.7 *Maslow: the self-actualizing individual*

The focus of this conceptualisation is Maslow's theory of self-actualization(1970).

Abraham Maslow began to research self-actualization when he tried to understand why Ruth Benedict and Max Wertheimer were different from others (Frick, 1971, p. 149). These were two teachers whom Maslow loved and admired. When writing about them, he realised that their behaviour patterns could be generalised: he was

referring to one kind of person and not two non-comparable individuals. He found that this pattern occurred elsewhere, in others as well.

Maslow's view of humankind is that the individual is essentially good. He acknowledges the positive aspects of human nature - an individual's dignity, his or her will to develop and the individual's functioning as a whole (Meyer et al., 1993, p. 358).

Maslow (1970) believed that an individual has certain basic needs, which are hierarchically arranged. An individual progresses through successive stages of need gratification toward the need for self-actualization. The basic needs are (ranked from lowest to highest): physiological needs; safety needs; affiliation and love needs; self-esteem needs and self-actualizing needs (Meyer et al., 1994, p. 358).

Different theorists have defined the concept of self-actualization. Many have discussed, hypothesised about, summarised and reviewed the concept of self-actualization from Maslow's point of view.

Maslow (1970, pp. 66,126) defined self-actualization as the "full use and exploitation of talents, capacities and potentialities". A self-actualizing individual tries to do the best that he or she is capable of doing.

Maslow (1968) believed that in order to qualify as a self-actualizing individual, an individual's deficiency needs should be already gratified and psychopathology and psychometric symptoms should be minimal (Jones & Crandall, 1991, p. 192).

Jones (1977, p. 29) summarised self-actualization according to Maslow's theory as an individual who has developed or is in the process of developing "to the full stature of which he is capable". A self-actualizing individual who uses his or her talents, capacities and potentialities is viewed as living an

enriched life, relatively free of inhibitions and emotional turmoil.

Harbaugh (1972, p. 4) defines self-actualization as the desire to be everything that one can be, to apply one's potential to the full and to help others reach their fully enriched selves. Harbaugh (1972) believed this is the most complex of the need levels in the hierarchy of needs. He quotes Maslow as stating that only a small proportion of the total population ever becomes self-actualized. This is in the region of one percent.

Fitts (1971, p. 5) reviewed Maslow's proposition that the need for self-actualization, the drive to become what one is capable of being, is a basic force that influences and motivates an individual's behaviour. Maslow's concept of self-actualization is central to the field of humanistic psychology. It emphasises the maximum development of human potential.

Das (1989, p. 13) viewed self-actualization as a key concept in humanistic psychology. Das (1989) reviews Maslow's concept of self-actualization as a natural tendency to express one's potential.

Fitts (1971, p. 5) correlates Webster's definition of actualization and Maslow's concept of self-actualization. Webster defines the term *actualize* as to make actual or real or realise in action. The concept of self-actualization refers to the way individuals implement or put their potential resources into motion.

Frick (1971, p. 168) maintained that in Maslow's theory of a psychology of being (an emerging transpersonal psychology), the values of a self-actualizing individual are considered to be expressions of higher, more persuasive, species-wide needs.

2.3 COMPARISON OF THE CONCEPTUALISATION OF SELF-ACTUALIZATION

Goldstein, Maslow and Rogers are three main theorists who hypothesised on the conceptualisation of self-actualization. This section illustrates a comparison of their theories by reviewing actualizing tendency, motivations, self-concept, self-fulfilment and the fully functioning individual. By comparing their concepts of self-actualization, one can focus on the different dimensions of self-actualization.

Maslow has often been closely linked with the theories of Goldstein (1939) and Rogers (1951). Maslow used his theory as an elaboration of Goldstein's central concept of self-actualization. Rogers believed that it is a primary motivating force, while Maslow believed that it is a desirable end state that has its own characteristics (Massey, 1981, pp. 351-355).

Goldstein (1939), Rogers (1951) and Maslow (1954) all focused on the concept of self-actualization in their theories. These theorists saw individuals as striving for perfection and attempting to realise their latent potential. Goldstein (1939) hypothesised that self-actualization is the main motive and a creative aspect of an individual's life. Rogers (1951) believed that individuals have a basic tendency to actualize, maintain and enhance the encountering organism. Maslow (1954) postulated that self-actualization closed the gap between value and fact (Bhagyavathy, 1991, p. 21).

2.3.1 Actualizing tendency

Rogers (1951) held a similar view to Maslow as he believed that individuals have one basic motive which he termed an *actualizing tendency*. In Roger's (1951) words, "the organism has one basic tendency and striving - to actualize, maintain and enhance the experiencing organism" (Das, 1989, p. 16).

Rogers (1959) defined the tendency toward self-actualization as follows: "following the development of the self structure, this general tendency towards actualization expresses itself also in the actualization of that portion of the experiences of the organism which is symbolized in the self" (Ford, 1991, p. 104).

2.3.2 Motivations

Goldstein (1939) postulated that all other motives arise from self-actualization. He believed that all other needs or motivations are manifestations of the basic tendency to realise the self. He felt that consistent behaviour within a changing environment is the individual's the best way of realising the self. Goldstein maintained that self-actualization is the source of all other motives that seek a release from tension and a positive feeling of achieving one's potentialities (Bhagyavathy, 1991, p. 23).

Maslow (1964) presents a different view of self-actualization from the above. He believed that self-actualization is not the source of all motivation but, rather, the highest form of motivation. Maslow proposed five hierarchical needs that lead to psychological health (Bhagyavathy, 1991, p. 23).

As Goldstein (1939) considered self-actualization to be the master-motive, he argued that all fundamental habit mechanisms arose out of an impulse to grow and realise one's potential. He identified this impulse as the "tendency to perfection" (Bhagyavathy, 1991, p. 28).

2.3.3 Self-concept

Maslow (1954) believed that there should be an insignificant contradiction between the self-concept of actual and ideal degrees of dominance. Rogers also emphasised the importance of self-acceptance. He believed that there is a basic similarity between the real self and the ideal self. If there is a huge

difference between the real and ideal self, the individual will be disorientated and maladjusted (Bhagyavathy, 1991, p. 66).

Maslow agreed with Rogers (1951) and Goldstein (1939) that the core tendency of personality is the "push toward actualization of inherent potentialities". Maslow believed that this ensures the development of a self-concept. Maslow's position lies between Rogers and Goldstein. He understands the push toward realising one's potentialities as the self-actualizing tendency (Maddi, 1989, pp. 111-320).

2.3.4 Self-fulfilment

Maslow and Rogers have similar conditions under which fulfilment occurs. However, there are superficial differences in terminology. Maslow believed that satisfaction of the superficial tendency is all that is required to ensure that self-actualization occurs. The difference between Rogers and Maslow is that Rogers maintained that the actualizing tendency incorporates the maintenance and enhancement of life. Maslow focuses on enhancement and maintenance as a function of a survival tendency only (Maddi, 1989:111-320).

Rogers (1961) believed that every individual has a positive striving within himself to attain what he or she is capable of achieving. He defined self-actualization as "the tendency toward fulfilment, toward actualization, toward the maintenance and the enhancement of the organism". Once an individual perceives action that leads to growth, he or she always chooses to grow rather than to regress (Bhagyavathy, 1991, p. 28).

Maslow (1954) saw self-actualization as an individual's need for self-fulfilment - "the tendency to become actualized in what he is potentially". This desire is to become everything that an individual is capable of becoming. Thus, self-actualization is the full use of talents, capabilities and potentialities (Bhagyavathy, 1991, pp. 53-56).

2.3.5 Fully functioning individual

Rogers and Maslow also agree on the individual who achieves self-actualization. Rogers believed that a fully functioning individual is characterised by the similarities between sense of self and organismic qualities, openness to experience and the love of self and others. Maslow used similar words - creative living, peak experiences and unselfish love - to describe a self-actualizing individual (Maddi, 1989, pp. 111-320).

Rogers believed that an individual should be more open to experiences. Maslow believed that an individual should become more actualized. Both stress the implications that society hinders the development of full functioning. It has often been written that these two theorists have similar views and have much in common. However, Rogers believed that the path to self-actualization is due to the potential of the self-concept and is associated with self. Maslow maintained that the path to self-actualization is due to the potential inborn in biological factors (Cartwright, 1979, pp. 414-416).

Several studies have been conducted that are related to the modern individual finding meaning in his or her existence by reaching his or her potential. Thomas (1968) established a group climate that facilitated an experience of the fully functioning individual as defined by Maslow's concept of self-actualization. Thomas (1968) believed that full functioning and self-actualization can be attained if certain conditions are met. Within a short period, individuals can rely less on the past and live in the present. Bhagyvathy (1991) believed that individuals who volunteer for a marathon group may become more self-actualized. Subjects in a marathon group experience a shift toward an increase in independence and self-supportiveness (Bhagyavathy, 1991, pp. 53-56).

The theories of Goldstein (1939), Rogers (1959) and Maslow (1954) focused on the concept of self-actualization. This focus is

illustrated by distinguishing their views of the actualizing tendency, motivations, self-concept, self-fulfilment and the fully functioning individual.

2.4 DIMENSIONS OF THE CONCEPTUALISATION OF SELF-ACTUALIZATION

Many authors have written about self-actualization. A broader perspective of the concept of self-actualization as viewed in humanistic psychology illustrates the different views of the concept of self-actualization. These views are discussed according to full potential, optimal development, actualizing tendency, motivational factors and self-actualizing values.

2.4.1 Full potential

Knapp (1976, p. 2) defined the self-actualizing individual as an individual who "utilizes one's talents and capabilities more fully than the average person, lives in the present rather than the past or the future, functions relatively autonomously and tends to have a more benevolent outlook on life and on human nature than the average person".

Meyer, Moore & Viljoen (1993, p. 362) believe self-actualization to be an exciting concept as it encourages an individual to discover and realise his or her highest psychological potential and in doing so, to become a fully-functioning goal-oriented being.

Hjelle and Ziegler (1987, p. 373) define self-actualization as an individual's "desire for self improvement, his or her drive to make actual what he or she is potentially. In short, to self-actualize is to become the kind of person one wants to become - to reach the peak of one's potential".

2.4.2 Optimal development

Meyer et al. (1993, p. 348) summarised Allport's view on optimal

development as follows: " the mature person's personality is exceptionally well-integrated in the sense that his development and his functional autonomy are highly evolved, with the result that he is able to consciously determine his own behavior and future development to a far grater extent than the immature person for whom the environment and unconscious drives are determining factors".

Rogers (1961) believed that optimal development or being fully functioning occurs when an individual is open to a wide variety of experiences and organises them within his or her self-concept. The more this happens, the better the individual will know himself or herself. Thus, he or she will be able to use all his or her abilities and talents in order to reach full potential (Meyer et al., 1993).

2.4.3 Actualizing tendency

Rogers (1951) elaborated on the concept of self-actualization as a construct that refers to the actualization tendency manifested in the "self". This is a subsystem that becomes differentiated within the whole person (Jones & Crandall, 1991, p. 49).

Bozarth and Bradley describe Rogers' view of self-actualization as an actualizing tendency. This tendency is seen as individual and universal, holistic, ubiquitous and constant, a directional process, tension increasing and vulnerable to environmental circumstances (Jones & Crandall, 1991, p. 48).

Frick (1971, p. 176) hypothesises that the tendency toward self-actualization is in the service of the actualizing tendency.

Drapela (1987, p. 124) claims that every individual has a basic tendency and striving for self-actualization. Self-actualization is accompanied by emotions. These emotions increase in strength, once an individual recognises the significance of their striving.

Rogers (1961) concludes that tendency toward self-actualization is an individual's lifelong process of realising his or her own potentialities in order to become a fully functioning person. Thus, what is actualized to be that self, is the self that one truly is (Potkay & Allen, 1986, p. 166).

2.4.4 Motivations

Goldstein (1939) saw the drive for self-actualization as a human motive. Displays of separate or multiple drives are seen as artificial. These artificial displays include hunger, sex and knowledge seeking. These needs are not fundamental but prerequisites to self-actualization. Goldstein (1939) viewed this *urge to perfection* as expressed through actual performance and preferred the term *choices in life* (Potkoy & Allen, 1986, p. 249).

Schultz (1990 p. 287) explains that when the actualization process is directed toward the conservation or enhancement of self, it is termed self-actualization. Self-actualization directs the individual toward greater autonomy and self-efficiency. This conveys the enrichment of one's life. It intensifies creativity and effective growth. Schultz concludes that its overall function is to provide wholeness.

Mcleed and Vodanovich expressed the view that self-actualizing individuals possess a high degree of self-esteem, have good interpersonal relations and adhere to rational behaviours and beliefs (Jones & Crandall, 1991, p. 137).

Bhagyavathy (1991, pp. 27-28) positions self-actualization as a "central unitary motivating force that impels human behavior and determines the cause of development and expression of human personality".

2.4.5 Self-actualizing values

Bhagavathy (1991, pp. 27-28) offers a good explanation of self-actualization, which is worthwhile quoting in full: "An individual goes through arduous and demanding period of preparation in order to realize one's possibilities. Self-actualization values exist as goals and are real even though not yet actualized". One experiences this with full concentration and total absorption.

Meyer, Moore and Viljoen (1988, p. 362) believe that an individual who is at the level of self-actualization is at the stage where growth motivation comes into effect. Self-actualization is a concept that includes 17 growth motivations. Metaneeds or B-values are motivations that are at the highest level of the hierarchy. These needs must be fulfilled to ensure maximal growth. Metaneeds include the need for truth, justice, beauty and perfection. Meyer et al. (1988) maintain that self-actualization is the process of becoming all one is capable of being, making full use of all one's abilities, talents and potentials. It is viewed as an exciting concept as it encourages an individual to discover his or her highest potential and become full-functioning and goal oriented.

This discussion of the perspectives of self-actualization has covered various themes including full potential, optimal development, actualizing tendency, motivational factors and self-actualizing values.

These dimensions relate to the conceptualisation of self-actualization. An understanding of the concept of self-actualization and various criticism of self-actualization, enables one to review the characteristics and the personality profile of the self-actualizing individual.

2.5 CRITICISM OF SELF-ACTUALIZATION

According to Kerlinger (1986), scientific studies require that important concepts be operationally defined. Thus, these components need to be defined in terms of observable and measurable phenomena that different observers can understand.

This section will be discussed in terms of criticism of the theory of self-actualization, criticism of the theorists of self-actualization as well as critical evaluation of the different views of self-actualization.

2.5.1 Criticism of the theory of self-actualization

Daniels (1988, p. 33) hypothesised that there were ambiguities and contradictions in the theory of self-actualization. He believed that the failure of the theory is due to the confusion of the project with naturalistic science. The adaptation of metaphors (biological) and methods (empirical) was also seen as inappropriate. Daniels (1988) contributed his version of a more fruitful approach. He emphasised a mythical perspective from which life becomes a shared quest for the human good.

In 1988, Daniels questioned whether planning the goal of reaching self-actualization defeats the spontaneous way of living it. Ellis (1991) believed that experimentation with new pursuits and enjoyments is goal seeking and goal seeking is spontaneously experimenting with new endeavors. Thus, both can be spontaneous and planned (Jones & Crandall, 1991, pp. 1-3).

Patterson (1974) believed that the concept of self-actualization restricts individuality. Self-actualizing individuals possess similar traits and characteristics (Jones & Crandall, 1991, p. 76).

Lethbridge (1986, pp. 90-91) believed that the main reason for the popularity of the concept of self-actualization is that there

is a perceived need for a theory of the individual that includes self-motivation and growth. This contributes to the progress of an individual to reach his or her full potential.

2.5.2 Criticism of the theorists of self-actualization

The three main theorists of self-actualization are Goldstein (1939), Rogers (1951) and Maslow (1954). Much research and literature exists on their work.

Maslow's theory of self-actualization has evoked extreme interest and popularity. Thus it is not surprising that his work has been heavily criticised by fellow psychologists and social critics (Jones & Crandall, 1991, p. 97).

Groves and Erikson (1975, p. 65) agree that since its development, Maslow's hierarchy of needs has been criticised and applauded. However, they believe that problems have been caused by the upper levels in the hierarchy, especially the self-actualizing section. The theory of motivation has been used as an simplistic method of determining individual needs and recommending ways to motivate individuals.

In 1977, Jones raised questions about the adequacy and validity of Maslow's concept of self-actualization. As for self-actualization being at the "top of the hierarchy" and only emerging as a final stage, Jones (1977) suggested that while advancing through lower need levels, there is no opportunity to seek and discover self-actualization. Jones hypothesised that these needs should not be viewed as vertical and sequential, but seen as circular. Maslow considered self-actualization to be a relatively permanent state. However, Jones argued that this is not a final need level as man is continuously fulfilling his potential. Thus, Jones proposes that self-actualization may also occur momentarily and fleetingly (Jones, 1977, pp. 218-222).

Potkay and Allen (1986, p. 263) postulated that Rogers (1951) and Maslow's (1954) theories were major strengths in humanistic psychology. Rogers' theory (1951) devoted its full attention to the individual. All individuals are seen to have considerable inner resources to reach self-actualization, within a favourable psychological environment. These environmental conditions are needed for the effective development of personality. These conditions include understanding, compatibility and an unconditional positive regard. Rogers believed that individuals could learn to trust their own organismic values to reach positive self-actualization. Rogers believed that individuals need an organised and a clear perception of themselves. He maintained that self-actualization is fostered by compatibility between internal organismic experience and external lived experiences. The compatibility between actual self and ideal self also sustains self-actualization.

Geller (1982, pp. 56-73) wrote an article on the critique of Maslow and Rogers. He hypothesised that Maslow's view was subtle, challenging and demonstrated insight. Geller compared Maslow and Rogers' theories. Unlike Rogers, Maslow developed one of the most comprehensive and systematic theories within contemporary psychology. However, Geller (1982) also viewed Maslow's theory in a negative light. He hypothesised that there were two major problem areas that threatened to jeopardise Maslow's theory. These areas focused on human nature and the explanation of "evil" and the logic of human development.

Schultz (1990, p. 313) focused on personality theories. He studied the humanistic approach to personality, particularly the theories of Maslow and Rogers. He believed that the approach emphasised aspiration, free will and the achievement of an individual's potential. This approach is viewed as depicting individuals as active and creative, and pertaining to development, growth and self-actualization.

Drapela (1987, p. 138) agreed that the theories of Maslow (1970) and Goldstein (1939) had a lot in common. He preferred to focus on Maslow's own distinct theory. Maslow agreed with Goldstein that basic human motivation is evident in the quest for self-actualization. Maslow used the above to arrange specific needs seen as motivated forces in a hierarchy. Goldstein focused his theory on philosophical, cultural and religious concerns. Goldstein believed that an individual's acceptance of the environment was an important condition for reaching self-actualization. Maslow claimed that self-actualization was due to intrapersonal growth. Contact with the environment was seen to be an outcome of self-actualization.

2.5.3 Critical evaluation of the different views of self-actualization

Some theorists have criticised other theorists and their views on self-actualization.

Ginsburg (1984, pp. 66-67) wrote on an article on the somatic understanding of self. This was a reply to Leonard Geller's (1982) article on the "Failure of the self actualization theory". He believed that Geller attempted to demolish the concept of self-actualization on theoretical and empirical grounds. Ginsburg agreed that this article was well argued, however, Geller's argument was based on a basic misunderstanding of Maslow's work. Ginsburg hypothesised that the expression of *self* in the human potential movement is fundamentally somatic.

Geller (1984, pp. 93-103) responded to Ginsburg's article (1984) by taking another look at self-actualization. Geller agreed that the justification of "the end upon which self-actualization is based is impossible". For Geller this justified his rejection of any version of self-actualization. Geller believed that there is no evidence to prove that all humans have a tendency to pursue some common end. Geller implies that individuals whose basic

needs have been satisfied give no indication of seeking a further end or moving on. An end distantly resembles self-actualization.

In 1988, Daniels looked at certain features of Geller's attack (1984) on self-actualization. He agreed that personal development is not a simple uni-dimensional process. However, Daniel objected to Geller's form of subjective realism. He believed that it completely missed the relevance of the concept of self-actualization. This implies that it is holistic (unitary rather than uni-dimensional) and universal. Geller was unwilling to attempt to establish a nonrelative status for the concept of self-actualization. Although Daniel believed that this understanding is vague and tenuous, he was unable to deny all comprehension, because he was unable to express or justify it formally (Daniels, 1988, pp. 9-10).

Brennon and Piechovski (1991, pp. 44-45) believed that it is a challenge to find living individuals who are on their way to achieving self-actualization. The shortage of in-depth case studies has lead to a misunderstanding of Maslow's discovery of self-actualizing individuals. They believed that Geller (1982) is an example of those critics who misinterpret and distort the original meaning of self-actualization. He saw it only as revealed in a socially self-centred individual.

2.6 PERSONALITY CHARACTERISTICS

Various theorists have identified a number of personality characteristics. The views of a healthy individual presented here are from Allport, Fromm, Roger, Frankl, Perls and Maslow. The main focus of this dissertation is on Maslow's 15 characteristics that are specific for a self-actualizing individual.

2.6.1 Allport

Allport's (1955) technical name for the self is *proprium*. The functions of the *proprium* are sense of body, self-identity, self-

esteem, self-extension, rational coping, self-image and propriorate striving. Allport believed that propriorate functions are core characteristics that do not operate independently but are intermingled to produce a life that expresses the core tendency of personality which is called propriorate functioning (Maddi, 1980, pp. 122-126).

Allport maintained that there are seven criteria of maturity, which represent specific characteristics of the healthy personality. These include: extension of the sense of self; warm relating of the self to others; emotional security; realistic perception; skills and assignments; self-objectification; and a unifying philosophy of life. These criteria are discussed below (Schultz, 1977, pp. 16-20).

2.6.1.1 Extension of the sense of self

As the circle of experience grows, the self broadens to include abstract values and ideals. The more the individual is involved with various activities that are relevant and important, the more psychologically healthy he or she will be.

2.6.1.2 Warm relating of self to others

The psychologically healthy individual is capable of displaying intimacy with others. Prerequisites include a well-developed sense of self-extension and self-identity. The intimacy is seen as unconditional and is not crippling or binding.

2.6.1.3 Emotional security

Healthy individuals are able to accept their weaknesses without being passively resigned to them. The psychologically healthy individual is able to accept human emotions and is able to control these emotions so that interpersonal activities are not disrupted.

2.6.1.4 *Realistic perception*

A healthy individual is able to have an objective view of the world and accept reality for what it is.

2.6.1.5 *Skills and assignments*

It is not sufficient to possess relevant skills, one needs to use them in a wholehearted, enthusiastic and committed manner. Work and responsibility add meaning and a sense of continuity to life.

2.6.1.6 *Self-objectification*

An individual requires insight into what one thinks one is and what one actually is. The healthy individual is open to the opinion of others in formulating an objective picture of his or her self.

2.6.1.7 *A unifying philosophy of life*

The healthy individual is motivated by long-term goals and plans. This individual has a sense of purpose and a mission to accomplish tasks at work.

2.6.2 **Fromm**

Fromm (1973) believed that an individual has existential needs and if an individual is unable to make some impact or to accomplish something, the individual can feel overwhelmed when facing obligations and responsibilities (Massey, 1981, p. 191).

Fromm viewed the core characteristics as the need for relatedness, transcendence, rootedness, identity and frame of reference (Maddi, 1980, p. 134).

In accordance with the above, Schultz (1977:43-46) identified the five needs which Fromm proposed as derived from the

freedom/security dichotomy. These needs are satisfied by healthy individuals in a creative and productive way and include relatedness, transcendence, rootedness, a sense of identity and frame of orientation.

2.6.2.1 Relatedness

The healthy way of relating to the world is through love. This satisfies the need for security and allows a sense of integrity and individuality.

2.6.2.2 Transcendence

The healthy individual achieves a sense of purpose and freedom in the act of creation by becoming an active creator of his or her own life.

2.6.2.3 Rootedness

The ability to establish a sense of involvement, love, concern, solidarity and participation in society satisfies the need for rootedness, connection and relatedness with the world.

2.6.2.4 A sense of identity

A sense of identity places the individual apart from others in terms of feelings about who or what he or she is. This individual is in more control of his or her life and is not controlled by others.

2.6.2.5 Frame of orientation

This is the individual's search for a frame of reference or context that is used to interpret all the phenomena, events and experiences of the world. Thus, the individual is able to develop a realistic and objective view of the world.

2.6.3 Rogers

Rogers maintained that the healthy individual is not a state of being but a process. According to Schultz (1977, pp. 32-35), Rogers offers five specific characteristics of a fully functioning individual. These include an openness to experience, existential living, a trust in one's own organism, a sense of freedom and creativity.

2.6.3.1 *An openness to experience*

An individual with no inhibitions is able to experience all feelings and attitudes. Each feeling of internal and external origin is relayed to the individual's nervous system without distortion or hindrance.

2.6.3.2 *Existential living*

The individual perceives each experience as fresh and new, which results in excitement as each experience unfolds. This enables the individual to continuously adapt to new circumstances.

2.6.3.3 *A trust in one's own organism*

This fully functioning individual is able to act on momentary and intuitive impulses. This is more reliable than rational or intellectual factors. This enables the individual to behave in a spontaneous manner but without total disregard for the consequences.

2.6.3.4 *A sense of freedom*

The healthy individual is able to choose freely between alternative courses of thought and action without any constraints or inhibitions.

2.6.3.5 Creativity

This individual is spontaneous in behaviour by changing, growing and developing in response to the rich stimuli of life around him or her. The fully functioning individual is capable of adapting to and surviving drastic changes in environmental conditions.

2.6.4 Frankl

Frankl's fundamental beliefs are the freedom of will, the will to meaning and the meaning of life. Creative, experiential and attitudinal values generate the meaning of life (Massey, 1981, p. 491).

Although Frankl does not present a list of characteristics of the healthy personality, Schultz (1977, p. 115) generalised Frankl's views as follows:

- (1) The individual is free to choose his or her own course of action.
- (2) This individual is personally responsible for conducting his or her own life and for his or her attitude toward fate.
- (3) This individual is not determined by forces outside his or her self.
- (4) This individual has found a suitable meaning in life.
- (5) This individual is able to manifest creative, experiential or attitudinal values.
- (6) This individual has transcended the concern with his or her self.
- (7) This individual has conscious control of his or her life.

2.6.5 Perls

Perls offers three core characteristics, including the social, the psychophysical and the spiritual. These three phases develop sequentially and are present as potentialities at birth and exist

in each adult at all times. During the social stage, the child develops an awareness of others. Awareness of self occurs during the psychophysical phase. Some individuals develop into a spiritual phase where apprehension of meaning occurs beyond being, self and self-image (Maddi, 1980, pp. 65-66).

Although Perls does not provide a list of characteristics of the psychologically healthy person, Schultz (1977:135-137) is able to conclude that the "here-and-now" individual has the following characteristics:

- (1) The individual is securely grounded in the present moment of existence.
- (2) The individual is fully aware and accepts who he or she is.
- (3) The individual is able to express impulses and yearnings.
- (4) The individual is able to take responsibility for actions.
- (5) The individual is able to shed responsibility for anyone else.
- (6) The individual is in touch with his or her self and the world.
- (7) The individual is able to express resentments.
- (8) The individual is free of external regulation.
- (9) The individual is guided by and reacts to the situation of the moment.
- (10) The individual is not constricted by ego.
- (11) The individual is not engaged in the pursuit of happiness.

2.6.6 Maslow

This section illustrates the integration of various authors on the characteristics of the self-actualizing individual as viewed by Maslow.

Maslow (1971, pp. 153-174) identified 15 characteristics that self-actualizing individuals have in common.

In 1954, Maslow studied individuals whom he thought were self-actualizing individuals. Maslow believed that the self-actualizing individual is healthy. He described a healthy individual as psychologically well-functioning and an exceptional individual. Maslow (1971) believed that the self-actualizing individual experiences more fully and vividly with full concentration and total absorption. The self-actualizing individual makes growth choices rather than fear choices, thus accumulating degrees of self-actualization (Sumerlin & Bundrick, 1996, pp. 253-254).

Meyer, Moore and Viljoen (1988, p. 358) believe that Maslow's concept of the tendency toward self-actualization illustrates that an individual's utmost goal is to realise his or her true potential. This is what human development finally leads to. Theoretically, this goal is within every individual's reach and there is no need to change one's basic nature. An individual only needs to discover what is already there and allow it to thrive.

The significance of Maslow's theory is in its presentation of an individual in which the biological, psychological and the roles of the past, present and future expectations are included. The environment is not a mere manipulator of behaviour as it provides the opportunities for self-actualization to take place (Meyer et al. 1993, pp. 371-372).

2.6.6.1 The 15 characteristics of the self-actualizing individual

Fifteen characteristics of a self-actualizing individual have been identified.

a Efficient perception of reality

Maslow (1970, p. 153) defined this characteristic as the ability to detect the fake and dishonesty in personality as well as to generally judge individuals correctly and efficiently.

According to Maslow (1970), the self-actualizing individual views life as it is rather than as what he or she wishes it to be. This individual does not allow desires and hopes to distort his or her observations. This enables one to tolerate ambiguity and uncertainty more easily than others. The self-actualizing individual is more comfortable with problems and puzzles that have no definite right or wrong solutions. This individual is not fooled by facades and can easily see underlying positive and negative traits in others that are not so apparent to most individuals. This quality makes self-actualizing individuals well-suited to be philosophers, explorers or scientists. In the search for truth, this individual is prepared to take risks (Feist, 1994, p. 611; Hjelle & Ziegler, 1976, p. 277; Meyer et al., 1993, pp. 364 -365).

b Acceptance of self, others and nature

Maslow (1970, p. 155) believed that a self-actualizing individual can accept his or her own human nature with all its shortcomings without feeling real concern. This individual accepts the weaknesses and evils of human nature in the same unquestioning spirit with which one accepts the characteristics of nature.

This characteristic shows a self-actualizing individual to have a sense of respect for self and others (Maslow, 1970). This individual will accept his or her own shortcomings and weaknesses without guilt, shame and anxiety. He or she has a good appetite, sleeps well and enjoys his or her sexuality. The self-actualizing individual is accepting of others and has no compelling need to instruct, inform or convert. This individual accepts illness and deaths more readily by realising that people suffer, grow old and

die. He or she accepts human nature and does not expect perfection in himself or herself, or in others (Feist, 1994, p. 611; Hjelle & Ziegler, 1976, p. 277; Meyer et al., 1993, p. 365).

c Spontaneity, simplicity and naturalness

Maslow (1970, p. 157) describes the self-actualizing individual as spontaneous in behaviour, inner life, thoughts and impulses. This behaviour is shown by simplicity and naturalness with an absence of artificiality.

The self-actualizing individual's inner life (thoughts, impulses) is unconventional, natural and spontaneous. However, this unconventionality may be suppressed if it means that the self-actualizing individual needs to protect himself or herself and others from hurt or injustice. A self-actualizing individual may tolerate practices, even if he or she regards them to be unnecessary and repetitive, or may refuse to be hampered by a social convention if it seems to interfere in a task that he or she may see as important. In this case, a self-actualizing individual may ignore generally accepted rules. Consequently, this characteristic of a self-actualizing individual may follow an ethical code that does not correspond to that of the community. The self-actualizing individual lives a simple life as he or she has no desire to build a complex facade intended to deceive others (Feist, 1994, p. 612; Hjelle & Ziegler, 1976, p. 278; Meyer et al., 1993, p. 365).

d Problem centredness

Maslow (1970:159) believed that a self-actualizing individual is problem centred rather than ego centered as he or she focuses on problems outside himself or herself.

This characteristic shows a self-actualizing individual to be committed to a task, vocation or beloved job that he or she regards as important (Maslow, 1970). This type of individual

lives to work rather than works to live. The self-actualizing individual has a realistic perception that enables him or her to distinguish between important and unimportant issues in life. The self-actualizing individual is concerned with philosophical and ethical issues. He or she tends to devote him or herself to nonpersonal "missions" (Feist, 1994, p. 612; Hjelle & Ziegler, 1976, p. 278; Meyer et al., 1993, p. 365).

e *Detachment: need for privacy*

According to Maslow (1970, p. 161), this characteristic illustrates that a self-actualizing individual seeks solitude and privacy to a greater degree than the average individual. He or she can be solitary without harm to himself or herself and without discomfort.

Maslow (1970) maintained that the self-actualizing individual has a detached quality that allows him or her to be alone without feeling lonely. In society, the self-actualizing individual is often viewed as aloof, reserved and cold by the "normal" individual. This is because the self-actualizing individual relies on his or her inner resources and does not need others for support, warmth and reassurance. Other behaviour factors include: being able to concentrate intensely; being oblivious to outer surroundings and remaining calm and serene during periods of personal misfortune. Maslow explains that this is due to a self-actualizing individual's ability to stand by his or her own interpretation of the situation rather than relying on the views of other individuals (Feist, 1994, p. 612; Hjelle & Ziegler, 1976, p. 278; Meyer et al., 1993, p. 365).

f *Autonomy: independence of culture and environment*

Maslow (1970, p. 162) hypothesised that the self-actualizing individual is not dependent on the physical and social environment for his or her main satisfactions, relying on his or

her own potentialities and latent resources for growth and development.

Maslow (1970) believed that this denotes a self-actualizing individual to be a self-contained unit. The self-actualizing individual has a high degree of self-direction. He or she regards himself or herself to be responsible in determining his or her own destiny. He or she is oblivious to opinions and affection of others. This individual shuns status, prestige and popularity. These extrinsic satisfactions are seen to be less significant than his or her own self-development, inner growth and potential. However, this type of relative independence relies on satisfying lower-level needs of being loved and respected in the past (Hjelle & Ziegler, 1976, p. 279; Meyer et al., 1993, p. 365).

g Continued freshness of appreciation

According to Maslow (1970, p. 163), a self-actualizing individual has the wonderful capacity to appreciate continuously, freshly and naively, the basic goods of life with awe, pleasure and wonder.

Maslow (1970) believed that this individual may see any sunset as being as beautiful as the first one that he or she ever saw. Even after seeing a million flowers, any flower may still be seen as breathtaking. The self-actualizing individual appreciates his or her possessions and does not take blessings for granted. He or she is seldom bored with life's experiences, and continues to be strengthened and inspired by life's experiences (Feist, 1994, p. 613; Hjelle & Ziegler, 1976, p. 279; Meyer et al., 1993, pp. 365-366).

h Peak or mystic experiences

Maslow (1970, p. 164) believed that the self-actualizing individual experiences emotions that sometimes get strong and extensive enough to be called mystic experiences.

"Peak experiences" refer to moments of intense excitement and high tension. This individual also experiences peacefulness, blissfulness and stillness. Maslow did not see these peak experiences as necessarily religious or spiritual in nature. The self-actualizing individual is seen to feel in harmony with the world, lose his or her self-awareness and, simultaneously, be more powerful and more helpless than before. He or she also becomes less aware of time and space. Not all peak experiences are of equal intensity - some experiences may be mildly sensed, generally felt or very intensive. During a peak experience, an individual has no needs, wants or differences (Feist, 1994, pp. 613-614; Hjelle & Ziegler, 1976, pp. 279-280).

i Social interest

Maslow (1970, p. 165) uses the word *Gemeinschaftgefühl*, which was used by Adler (1939), to describe the feelings that a self-actualizing individual expresses for mankind.

The self-actualizing individual is sometimes troubled and saddened by the shortcomings of humans. However, he or she experiences a deep feeling of togetherness with humanity. This gives him or her a genuine desire to help others - strangers as well as friends. This is illustrated by feelings of compassion, sympathy and affection for all humankind (Feist, 1994, p. 614; Hjelle & Ziegler, 1976, p. 280).

j Interpersonal relations

Maslow (1970, p. 166) believed that a self-actualizing individual has deeper and more profound interpersonal relations than other adults (although not necessarily as deep as those of children).

The self-actualizing individual often associates himself or herself with others of a similar character, talent and capacity. He or she usually has a small circle of friends as befriending others in the self-actualizing way takes up much time. These

interpersonal relationships are very intense. Quality is more important than quantity. The self-actualizing individual has tender feelings for children and is particularly fond of them (Feist, 1994, pp. 614-615; Hjelle & Ziegler, 1976, p. 280; Meyer et al., 1993, p. 366).

According to Maslow (1970), the self-actualizing individual commonly attracts admirers who demand more than he or she can give. The self-actualizing individual tries to avoid experiencing distressful relationships as gracefully as possible and may become very harsh with others who are hypocritical, pretentious or indignant. The self-actualizing individual prefers mutual relationships rather than one-sided relationships (Feist, 1994, pp. 614-615; Hjelle & Ziegler, 1976, p. 280; Meyer et al., 1993, p. 366).

k Democratic character structure

Maslow (1970, p. 167) describes the self-actualizing individual as having all the obvious or superficial democratic characteristics.

The self-actualizing individual is willing to learn from anyone who is willing to teach him or her, despite class, colour, age, gender, qualifications or political beliefs. Maslow (1970) believes that the self-actualizing individual is free of prejudice and has a basic respect for others as he or she is unaware of superficial differences. However, the self-actualizing individual does not randomly equalise all humans (Feist, 1994, p. 615; Hjelle & Ziegler, 1976, pp. 280-281).

l Discrimination between means and ends

Maslow (1970, p. 168) describes a self-actualizing individual as being ethically strong, having definite moral standards and doing right and no wrong. The self-actualizing individual can distinguish between the means and ends.

This individual often enjoys the means leading to a goal that more impatient individuals would dislike. The self-actualizing individual enjoys doing something for its own sake and not because it is a means to an end goal (Feist, 1994, p. 615; Hjelle & Ziegler, 1976, p. 281).

m Sense of philosophical humour

Maslow (1970, p. 169) identified this characteristic to be common to all his subjects. He believed that the self-actualizing individual's sense of humour is not of the ordinary type. He or she does not consider what the average individual considers to be funny, to be amusing.

This individual enjoys humour that expresses the foolishness of humanity and points out ambiguities, compared to the average individual who enjoys humour that pokes fun at another's inferiority or hurts and ridicules someone else. The laugh is usually at somebody's expense. Maslow (1970) believed that philosophical or cosmic humour usually rouses more of a smile than a laugh. The humour is spontaneous rather than planned. It usually cannot be repeated because it is situation dependent. Retelling of the incident almost loses its original quality of amusement. It is a "should-have-been-there" situation (Feist, 1994, pp. 615-616; Hjelle & Ziegler, 1976, p. 281).

n Creativeness

Maslow (1970, p. 169) found creativity to be a universal characteristic of all individuals studied or observed. Each individual shows in one way or another a special kind of creativeness, originality or inventiveness that has peculiar characteristics.

Creativity found in the self-actualizing individual is different from the unusual talent reflected in poetry, art, music or science. Maslow associated it with natural naive creativity found

in unspoilt children. This type of creativity appears in everyday life as an expression of personality that is perceptive and spontaneous. It revolves round the discovery of new and novel ideas that depart from conventual ideas. The self-actualizing individual has a certain perception of beauty and reality that forms the foundation of true creativity. Maslow views creativity as the ability to see more deeply and accurately. One also acts more spontaneously and naturally (Feist, 1994, p. 616; Hjelle & Ziegler, 1976, p. 281; Meyer et al., 1993, p. 367).

o Resistance to enculturation

Maslow (1970, p. 171) maintained that a self-actualizing individual resists enculturation and maintains a certain inner detachment from the culture in which he or she is immersed.

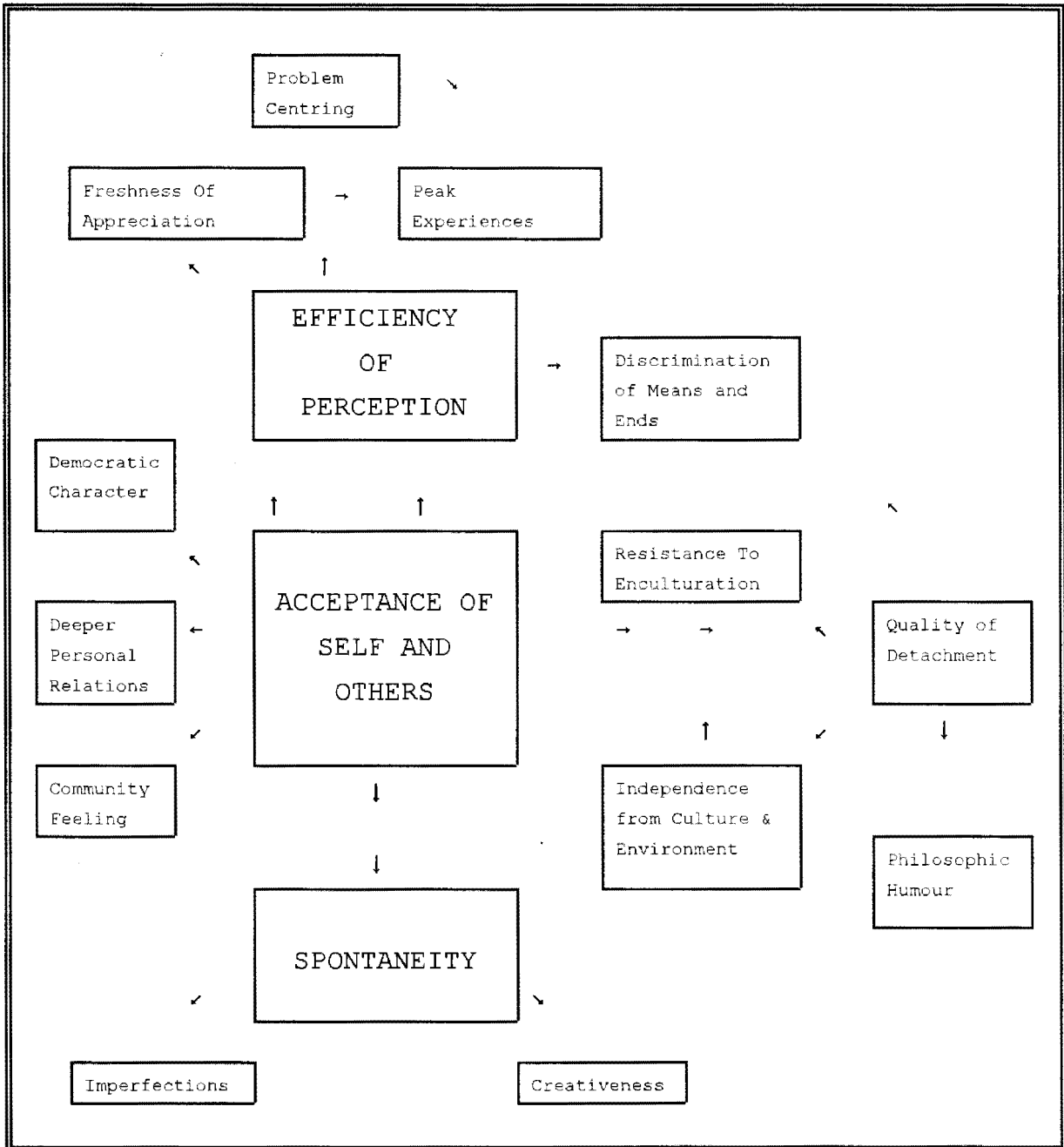
Maslow observed that the self-actualizing individual makes his or her own decisions despite contrary popular opinions. This individual is autonomous and follows his or her own standards of conduct and does not blindly follow the rules of others. However, this individual remains within limits of conformity concerning choice of clothes, speech, food and a manner of doing things that are not really important enough to raise objections, and is opposed to ineffective rebellion which would get one nowhere. The self-actualizing individual is independent and conventual when feeling that only basic issues are involved. He or she is aware of society's imperfections and accepts that social change can be slow but can be achieved by working within the system. This individual demonstrates a calm, long-term commitment to cultural improvement (Feist, 1994, p. 616; Hjelle & Ziegler, 1976, pp. 281-282; Meyer et al., 1993, p. 367).

2.6.7 Distinguishing characteristics of a self-actualizing individual

Cartwright (1979, pp. 414-416) presented different theories of personality. Several comparisons were made regarding what the

theories deal with and their particular models. Essential features of several personality theories were described and compared.

Cartwright (1979, p. 12) presented the following model to illustrate the above-mentioned distinguishing characteristics of a self-actualizing individual with an indication of the relationships among them. The three core characteristics shown are acceptance of self and others, spontaneity and efficiency of perception.

FIGURE 2.1 Characteristics of the self-actualizing individual

Source: Cartwright, 1979, p. 13

2.7 PERSONALITY PROFILE

A personality profile of the self-actualizing individual is viewed from two types of behaviours, which include intrapersonal and interpersonal behaviours. The intrapersonal behaviours are seen as prerequisites for the interpersonal characteristics.

2.7.1 Intrapersonal behaviour

This behaviour refers to cognitive, affective and conative behaviours.

2.7.1.1 Cognitive behaviour

The self-actualizing individual accepts his or her own shortcomings and weakness without feelings of guilt, shame or anxiety.

This individual accepts human emotions and is able to control these emotions without disrupting other activities (Schultz, 1977, p. 18).

This individual is free of prejudice, has a basic respect for others and accepts other individuals with all their flaws.

2.7.1.2 Affective behaviour

The self-actualizing individual is able to perceive himself or herself, other individuals and the environment in a realistic way to ensure that capabilities are known and tasks are achievable.

This individual experiences life as meaningful and accepts full responsibility for his or her feelings.

According to Allport (1961, p. 188), the self-actualizing individual has learnt to live with his or own emotional state in such a way that this does not lead to impulsive acts and interference with the wellbeing of others.

2.7.1.3 Conative behaviour

The self-actualizing individual lives a simple life and has no desire to build a complex facade that will deceive others.

This individual's life does not revolve solely around himself or herself (ego centred) but rather focuses on problems and matters outside him or herself (problem centred). These matters include friends, hobbies, ideas and a career.

The more an individual focuses on activities that are relevant and important, the more healthy the individual will be (Schultz, 1977, p. 16).

An individual who is self-actualized is not dependent on the physical and social environment for his or her main satisfactions.

2.7.2 Interpersonal behaviour

Intrapersonal behavior is a prerequisite for interpersonal behaviours. These behaviours include: acceptance of other individuals; being responsible, spontaneous and natural; and experiencing empathy, consideration and love toward others.

The psychologically healthy individual is capable of displaying intimacy toward others.

By displaying love, the individual is able to satisfy the need for security.

The self-actualizing individual has interpersonal relationships that are very intense. Quality relationships are preferred to a large quantity of relationships. However this individual knows when and how to maintain enough distance so as not to become intrusive or possessive.

An individual who is self-actualized, often experiences a desire to help others. This individual has feelings of compassion for all of mankind.

2.8 SUMMARY

This chapter focused on the concept of self-actualization by reviewing the characteristics and personality profile of a self-actualizing individual. Background to the research and various studies of personality were discussed. In order to explain the concept of self-actualization, this chapter focused on Maslow's view of the concept, other views as well as a comparison and different dimensions of the theories of self-actualization. A critical evaluation of self-actualization was included, which identified the criticism of the theory, theorists and other views of self-actualization.

In the concluding section, characteristics of personality and the self-actualizing individual, Cartwright's model and a personality profile of the self-actualizing individual were discussed. This offered a further understanding of the concept of self-actualization. This chapter sets the foundation for the following chapters.

With reference to the literature review of this research (see 1.3.2.), it can be concluded that the first aim, namely, to conceptualise self-actualization and to describe the characteristics and personality profile of the self-actualizing individual has been addressed.

CHAPTER 3 THE PERSONAL ORIENTATION INVENTORY (POI)

The objective of this chapter is to report on relevant information to formulate a scientific conclusion for selecting the Personal Orientation Inventory (POI) as the instrument for the purpose of this research. Various tests, instruments and questionnaires have been designed to measure self-actualization. For the purpose of this research, these instruments will be described very briefly because the main emphasis falls on the Personal Orientation Inventory (POI). This instrument is discussed in terms of development, rationale, description, scales, administration, interpretation, validity and reliability. Previous research conducted on the POI is also discussed.

3.1 MEASUREMENT OF SELF-ACTUALIZATION

The following section illustrates various tests and questionnaires that are used to measure self-actualization and other related concepts. For the purpose of this research, these measurements will be briefly described as the emphasis of this research falls on the Personal Orientation Inventory (Shostrom, 1974).

Bhagyavathy (1991, p. 83) identified the Q-sort Technique that was also used by Curtis and Cundiff (1969) to measure the level of self-actualization.

Another measuring instrument discussed by Bhagyavathy (1991, p. 123) is the Self-actualization Inventory, which was developed for the purpose of measuring self-actualization.

Mattocks and Jew (1974, p. 69) correlated the Personal Orientation Inventory with the Q-sort Adjustment Scale, which was developed by Dymand in 1954. These scales define the well-adjusted individual.

The Need Satisfaction Questionnaire (NSQ) was used by Porter from 1961 to 1963 in his studies of Managerial Job Attitudes. The Need Satisfaction Questionnaire consists of 13 items that relate to security, social, esteem, autonomy and self-actualization (Payne, 1970, pp. 251-252).

Shostrom (1973, p. 479) presented correlations of the Personal Orientation Inventory with other standardised measurements of personality. These included the Comrey Personality Scales (CPS), the Sixteen Personality Factor Scale (16PF), the Guilford-Zimmerman Temperament Survey and the Eysenck Personality Inventory (EPI). Self-actualization is viewed to be a condition of the full functioning individual as measured by the Personal Orientation Inventory, whereas mental ill health is measured by the Minnesota Multiphasic Personality Inventory (MMPI).

The Seeking of Noetic Goals Test (SONG) was developed by Crumbaugh (Sweetland & Keyser, 1983). This test measures the strength of an individual's motivation to find meaning in life.

Mitchell (1985) discussed the Incentives Management Index by Hall and Seim. This instrument is based on Maslow's hierarchy of needs, which includes self-actualization.

Mitchell (1985) also described the Meta-Motivation Inventory (MMI) by Walker as a possible instrument to test self-actualization. There are 16 items in this instrument that measure self-actualization.

The Self-actualizing Inventory by Reddin and Rowell (Mitchell, 1985) measures the degree to which physical needs, security needs, relationships, respect, independence and self-actualization are unfulfilled.

Jones and Crandall (1986) identified published instruments that measure or provide an index of self-actualization. These instruments include Jones' Self-actualization Scale (JSAS) by

Jones and Randolph. The Tennessee Self-concept Scale (TSCS) by Fitts was also identified.

In conclusion, Hjelle and Ziegler (1987) believe that the development of the Personal Orientation Inventory (POI) by Shostrom (1974) is a reliable and valid measure of self-actualization which could be used to assess an individual's degree of self-actualization. These authors hypothesised that it resulted in empirical research that related to Maslow's theory of self-actualization.

3.2 THE PERSONAL ORIENTATION INVENTORY

The following sections in this chapter illustrate the Personal Orientation Inventory (POI) that was developed by Shostrom (1963,1974) as a measure of self-actualization.

Shostrom (1964, p. 207) attempted to measure values and behaviour related to positive mental health, using his own developed POI. This diagnostic instrument attempts to give one the ability to measure his or her current level of positive health or self-actualization.

According to Knapp (1976, pp. 2-4), the POI measures a wide range of value concepts that have both personal and social relevance. The POI also interprets the scales in terms of positive concepts of self-development and the non-threatening character of the items. This has resulted in the application of POI in a wide variety of settings.

3.2.1 Development of the POI

In 1963, Shostrom designed the Personal Orientation Inventory (POI) to measure different degrees of self-actualization. This instrument has since been widely applied in industry, education and psychology (Maslow, 1970, p. 249).

The POI was developed to provide a standardised instrument to measure behaviour and values that are strongly believed to influence the development of a self-actualizing individual. Items in the POI were designed to reflect common values that are significant in an individual's approach to life (Knapp, 1976, pp. 3-4).

According to Olczack and Goldman (1975, p. 287) the POI as developed by Shostrom (1968) was endorsed by Maslow, as a knowledgeable and respected humanistic psychologist.

Maslow's concept of self-actualization (1962, 1970), Perls' conceptualisation of time orientation (1947, 1951) as well as Riesman, Glazer and Denney's concept of inner- and outer-directiveness (1950) were among the concepts incorporated in the initial development of the POI (Shostrom, 1974, p. 23).

3.2.2 Rationale of the POI

According to Hjelle and Ziegler (1976, p. 274), the Personal Orientation Inventory is a self-report questionnaire that was devised in strict accordance with Maslow's theory and provides an assessment of an individual's degree of self-actualization in a high score and the absence of self-actualization in a low score.

A self-actualizing individual may be described as one who uses his or own capabilities to their full potential, lives in the present and has a more a benevolent outlook on life and human nature than the average individual (Knapp, 1976, pp. 2-3).

The medical model stresses movement from "illness" to a mean of "normalcy". On the other hand, the POI measures concepts that reflect a more optimal self-actualizing model distinguishing between a "normal" individual and an effective and self-fulfilled individual (Knapp, 1976, p. 1).

3.2.3 Description of the POI

Hattie, Hancock and Brereton (1984, p. 17) describe the POI as a measurement of various aspects of self-actualization. It consists of 150 pairs of value judgments selected by psychotherapists over a period of five years. The POI is moderately resistant to faking and is sensitive to changes that result from various treatments, that is, group therapy techniques. Hattie (1981) concluded that the POI was based on four underlying factors. These factors included sensitivity to self and others, perception of reality, acceptance of present self and conformity to self-actualizing values.

The 150 items consist of *two-choice comparative value judgment* statements that reflect the values and behaviour of a self-actualizing individual (Knapp, 1976, pp. 2-3).

The items in the POI were designed to reflect values that are considered by an individual to be significant to his or her approach to life. The items in the POI are stated as positive and negative statements. The use of the double-statement items provides an individual with a more clearly delineated choice (Knapp, 1976, p. 4; Shostrom, 1974, p. 3).

3.2.4 Scales of the POI

The behaviour measured by each of the scales indicates the positive characteristics of the self-actualizing individual. The POI consists of 12 scales: two main scales and 10 sub-scales. The two main scales are Time Competence and Support Ratio.

(1) Time Competence (Tc) - 23 Items

This scale measures the degree of competence in which an individual lives in the present as opposed to the past or the future. A self-actualizing individual is *time competent*. He or she is able to relate the past and future to the present in

meaningful harmony. The self-actualizing individual's desires are meaningfully tied to current working goals. A time incompetent individual lives with guilt, regrets and resentment about the past and/or idealised goals, expectations and fears about the future (Knapp, 1976, p. 5).

(2) Support Ratio / Inner Direction (I) - 127 items

This scale measures whether an individual is independent. A "self"-oriented individual is directed by internal values, principles and motivations. This individual is able to transcend and integrate the two extremes of being self-directed and other directed to reach an optimal balance. "Other" oriented individuals are influenced by external forces and pressures. These individuals seek acceptance from others by manipulation as well as attempting to impress them from behind a mask (Knapp, 1976, p. 5; Shostrom, 1974, pp. 14-15).

The 10 subscale scores reflect what is important for development in a self-actualizing individual (Knapp, 1976, p. 6). Accordingly, the 10 subscales are divided into the following five categories, which mirror this development: values; feeling; self-perception; synergistic awareness and interpersonal sensitivity (Shostrom, 1974, p. 17).

Values

(3) Self-actualizing value (SAV) - 26 Items

This scale measures the affirmation of values in a self-actualizing individual. This implies the acceptance of oneself in spite of one's weaknesses or deficiencies. A high score indicates that the individual lives by values that are characteristic of a self-actualizing individual. A low score indicates that the individual rejects the values that are characteristic of a self-actualizing individual (Knapp, 1976, p. 6; Shostrom, 1974, p. 17).

(4) Existentialism (Ex) - 32 Items

This scale complements the SAV and measures the ability to react without rigid adherence to principles. It measures an individual's flexibility and judgment in applying values or principles to his or her life. This is the measure of one's ability to use good judgment in applying these general principles. A high score indicates flexibility in the application of the values. A low score indicates a tendency to hold onto values so rigidly that the individual becomes compulsive or dogmatic (Knapp, 1976, p. 6; Shostrom, 1974, p. 17).

Feelings

(5) Feeling reactivity (Fr) - 23 Items

This scale measures the sensitivity of an individual's response to his or her own needs and feelings. A high score indicates the presence of this sensitivity. A low score indicates a lack of sensitivity to those needs and feelings (Knapp, 1976, p. 6; Shostrom, 1974, p. 17).

(6) Spontaneity (S) - 18 Items

This scale measures the freedom to be spontaneous or to be oneself. A high score reflects the ability to express feelings in spontaneous action. A low score reflects a fear of expressing feelings through behaviour (Knapp, 1976, p. 6; Shostrom, 1974, p. 17).

Self-perception

(7) Self-regard (Sr) - 16 Items

This scale measures an individual's ability to like himself or herself because of an acknowledgment of his or her worth or strengths. A high score reflects the ability to regard oneself

positively as a result of a feeling of personal strength. A low score reflects feelings of low self-worth (Knapp, 1976, p. 7; Shostrom, 1974, p. 17).

(8) Self-acceptance (Self-actualization) - 26 Items

This scale is closely allied to the Sr scale. It measures an individual's acknowledgment and acceptance of himself or herself in spite of weaknesses. A high score reflects acceptance of self. A low score indicates an inability to accept personal shortcomings (Knapp, 1976, p. 7; Shostrom, 1974, p. 18)

Synergistic awareness

(9) Nature of man constructive (Nc) - 16 Items

This scale measures the extent to which an individual has a constructive view of humankind. People can be seen as a good-evil, masculine-feminine, selfish-unselfish and spiritual-sensual depending on the score. A high score indicates that the individual sees others as essentially good, which reflects the ability to achieve synergy in the understanding of others. A low score indicates that the individual sees humankind as evil or bad (Knapp, 1976, p. 7; Shostrom, 1974, p. 18).

(10) Synergy (Sy) - 9 Items

This scale measures the ability to achieve synergy by transcending dichotomies. A high score suggests that the individual is able to see opposites of life as meaningfully related, for example, by understanding that work and play are not necessarily mutually exclusive. This individual perceives work to be enjoyable and purposeful. A low score suggests that the individual sees opposites as antagonistic (Knapp, 1976, p. 7; Shostrom, 1974, p. 18).

Interpersonal sensitivity

(11) Acceptance of aggression (A) - 25 Items

This scale measures the ability of an individual to accept his or her natural aggressiveness rather than denying and repressing aggression. A high score indicates that the individual has the ability to accept anger or aggression as a natural force. A low score indicates that the individual denies these feelings by rejecting or repressing them (Knapp, 1976, p. 7; Shostrom, 1974, p. 18).

(12) Capacity for intimate contact (C) - 28 Items

This scale measures the ability to develop intimate relationships with others without any expectations and obligations. A high score indicates that the individual is able to establish meaningful and close relationships with others. A low score indicates that the individual has difficulty in establishing warm interpersonal relationships (Knapp, 1976, p. 7; Shostrom, 1974, p. 18).

3.2.5 Administration of the POI

Administration of the POI takes 30 to 40 minutes (Tosi & Lindamood, 1975, p. 215).

Directions are given on the cover of the booklet. The subject must print his or her name and additional information on the answer sheet (Shostrom, 1974, p. 6).

The individual is instructed to select one statement from each pair that is most relevant to himself or herself (Knapp, 1976, pp. 2-3).

Subjects are asked to choose the appropriate alternative from the items given and encouraged not to omit any answers. The POI is

basically self-administered, making it possible to be used in groups or individually. The subject writes the answers on a standard POI answer sheet to be scored manually (Shostrom, 1974, p. 6).

After the subject has completed the POI, the interpreter needs to inspect the marked sheet. A horizontal line should be drawn through both columns where an item has been omitted. The POI is considered invalid if the subject has left out more than 15 items. The scoring of the answer sheet is a straightforward clerical task and easily done manually. A scoring template is placed over the answer sheet to determine the raw score for each scale. This is obtained by counting the number of blackened areas that are visible through the holes in the key. Each score total is entered on the corresponding line on the answer sheet. The raw scores are then plotted on the profile sheet. The plotted raw scores are then connected with straight lines. The self-actualizing profile can be plotted and determined using standard scores. (Shostrom, 1974, p. 6).

The overall profile evaluation can be seen after plotting the profile. One needs to consider where the scores are plotted (Knapp, 1976, pp. 72-73; Shostrom, 1974, p. 13).

3.2.6 Interpretation of the POI

Time Orientation and Support Orientation can be clinically interpreted in relative or proportional terms. These main scales are important in personal development and interpersonal development (Knapp, 1976, p. 5).

Scale scores are normative. The score on one scale is not dependent on the score for another scale. Scoring of each item remains independent of other scores. The items in the POI can be described as *paired opposites*, which implies that each concept is described as a positive or negative statement (Knapp, 1976, pp. 2-3).

Weiss (1987, p. 897) explained that scores above the mid-line (indicated by the standard score of 50) but below a standard score of 60 are considered to indicate a self-actualizing individual. If most of the scores on the profile are considerably above 60, an individual may be presenting as being "too" healthy or over-emphasising the freedom and self-actualization of the individual.

Shostrom (1973) maintained that a self-actualizing individual scores T standard scores of between 50 and 65. If most of the scale scores are below this mean, the probability is that the individual is experiencing difficulty in personal effectiveness, and would benefit from changes in value orientations to facilitate personal development toward becoming a self-actualizing individual. An individual who scores higher than the Actualizing Range (T scores between 60 and 70) is termed to be a *Pseudo Actualizing Individual*. This individual is enthusiastic about completing the POI according to the perspective of Maslow and humanistic literature. The individual's knowledge of underlying theoretical concepts results in an over-estimated profile. If most of the scales' scores fall above the mean standard score line, the probability is that the individual is functioning relatively effectively and is comparatively competent in the development toward becoming a self-actualizing individual (Knapp, 1976, pp. 72-73; Shostrom, 1974, p. 13).

3.2.7 Validity of the POI

Shostrom (1974, p. 23) stated that the most important test of validity of the POI is that it should differentiate between an individual who is self-actualizing and an individual who is not. In order to test the effectiveness of differentiation, the POI was administered to two groups. One group consisted of relatively self-actualizing individuals and the other, relatively "non-self-actualizing" individuals. Each individual was carefully selected by practising certified clinical psychologists. Results

indicated that the POI significantly differentiates between the two groups. The means for the self-actualizing group were above the means of the normal adult group on 11 of the 12 scales whereas the means for the non-self-actualizing group was below the norm means on all scales. This illustrated a consistent difference between the two groups.

In 1971, Maslow stated that "self actualization can now be defined quite operationally, as intelligence used to be defined, i.e. self actualization is what the test tests" (Maslow, 1971, p. 28).

Shostrom and Knapp (1966) conducted a study in a clinical setting. The results illustrated that the POI differentiated between the two groups on the two major scales and nine out of the ten subscales (Shostrom, 1974, p. 23).

Murray (1966) investigated the use of the POI to measure the relationship of teacher success in self-actualization. This was measured by ratings of "teacher concern for students" made by the teacher's students. The outcome was that there was a noticeable difference between teachers with high ratings versus those with low ratings. The more successful teachers had higher ratings (Shostrom, 1974, p. 26).

Klavetter and Magor (1967, pp. 422-423) researched various studies relating to the validity of the POI. They found that the results of these studies suggest that the scores on the POI are highly stable and are sufficiently valid measures of "health-growth dimensions of personal functioning".

Tosi and Lindamood (1975, pp. 221-222) conducted research on the internal consistency of the POI. Studies illustrate that the POI distinguishes groups that appear to be related to self-actualization, thus showing the instrument's construct validity. The POI has concurrent validity as it supports the measurement

of psychological health. Predictive validation studies support the POI's measurement of criteria related to self-actualization.

3.2.8 Reliability of the POI

There have been numerous studies on the POI to establish its reliability.

Klavetter and Magor (1967) studied test-retest reliability coefficients for POI. A sample of 48 undergraduate college students were used. The POI was administered twice with a one-week interval to the 48 students with the instruction that it was part of an experiment to take the POI twice. The outcome was that the reliability coefficients for the two major scales were 0,71 and 0,77 respectively. The coefficients for the subscales ranged from 0,52 to 0,82 (Shostrom, 1974, p. 33).

The statistical redundancy for each subscale indicated that performance would be more accurately expressed in terms of fewer dimensions (Klavetter & Magor, 1967, pp. 423-424).

The results are shown in Table 3.1.

TABLE 3.1 Test-retest Reliability Coefficients for POI

| POI SCALES | TEST RETEST RELIABILITY |
|-------------------------------|----------------------------|
| Time Competent | 0.71 |
| Inner Direction | 0.77 |
| Self Actualizing Value | 0.69 |
| Existentiality | 0.82 |
| Feeling Reactivity | 0.65 |
| Spontaneity | 0.76 |
| Self Regard | 0.71 |
| Self Acceptance | 0.77 |
| Nature of Man | 0.68 |
| Synergy | 0.71 |
| Acceptance of Aggression | 0.52 |
| Capacity for Intimate Contact | 0.67 |

Source: Klavetter & Magor (1967, p. 423)

Illardi and May (1968) administered a battery of tests to 46 female nursing students over a one-year period. The POI was one of the tests used in this battery of tests. The test-retest reliability coefficients ranged from 0,32 to 0,74 (Shostrom, 1974, p. 33).

The results are illustrated in Table 3.2.

TABLE 3.2 Test-retest Reliability Coefficients of the POI

| POI SCALES | TEST RETEST RELIABILITY |
|-------------------------------|----------------------------|
| Time Competence | 0.55 |
| Inner Direction | 0.71 |
| Self Actualizing Value | 0.60 |
| Existentiality | 0.74 |
| Feeling Reactivity | 0.32 |
| Spontaneity | 0.51 |
| Self Regard | 0.66 |
| Self Acceptance | 0.71 |
| Nature of Man | 0.49 |
| Synergy | 0.40 |
| Acceptance of Aggression | 0.64 |
| Capacity for Intimate Contact | 0.58 |

Source: Illardi & May (1968, p. 70)

Illardi and May (1968, p. 71) reported that findings were well into the range of comparable MMPI and EDPS test-retest reliability studies.

3.3 PREVIOUS RESEARCH

There has been extensive research on the POI since its publication as the first standardised instrument for the measurement of self-actualization. This research refers to faking, interrelationships, factorial studies and reliability. References are made to the time period from 1965 to 1996. Information between 1996 and 1999 seems unattainable.

3.3.1 Faking

In terms of *faking*, there have been several studies to investigate whether POI responses are affected by the tendency

to present oneself in a favourable light. Foulds and Warehime (1971, p. 279) proposed that the POI scores produced by a "fake good" response set would be lower than mean scores obtained from the same subjects under ordinary testing conditions.

In another study, Warehime and Foulds (1973, p. 94) found that a fake cultural conformity response set would result in either no effect or depressed scores on the POI, while a fake healthy or denial of pathology set may tend to elevate some POI scale scores.

In response to the above, Knapp (1976, p. 73) believed " ...the conscious attempt to present oneself in a favorable (socially desirable) light, results in a generally depressed POI profile, while intellectualised responses based on a knowledge of the underlying theoretical concepts results in a typically hyper elevated profile".

3.3.2 Interrelationships

Knapp (1976, p. 86) reported a study conducted in 1965 that reviewed the interrelationships among the POI scales. He conducted a study on a sample of 138 college students. Most of the interrelationships among the subscales were positive. These scales ranged in magnitude from 0.02 up to 0.64 between Feeling Reactivity and Acceptance of Aggression. These results are illustrated in Table 3.3.

TABLE 3.3 Intercorrelational matrix for the POI (n=138)

| POI scales | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|------|------|
| 1 | TC | .49 | .26 | .31 | .20 | .38 | .44 | .43 | .19 | .29 | .17 | .25 |
| 2 | I | | .54 | .70 | .58 | .71 | .62 | .63 | .37 | .41 | .61 | .55 |
| 3 | SAV | | | .21 | .23 | .45 | .56 | .03 | .41 | .58 | .32 | .15 |
| 4 | Ex | | | | .32 | .42 | .32 | .57 | .27 | .36 | .39 | .48 |
| 5 | Fr | | | | | .44 | .25 | .21 | -.03 | .12 | .64 | .53 |
| 6 | S | | | | | | .44 | .40 | .17 | .30 | .47 | .30 |
| 7 | Sr | | | | | | | .21 | .32 | .26 | .28 | .23 |
| 8 | S a | | | | | | | | .24 | .22 | .32 | .30 |
| 9 | Nc | | | | | | | | | .53 | -.04 | -.02 |
| 10 | Sy | | | | | | | | | | .28 | .14 |
| 11 | A | | | | | | | | | | | .44 |
| 12 | c | | | | | | | | | | | |

Source: Knapp (1976, p. 87)

Knapp (1976, p. 87) explained that the concepts measured by the POI were not conceived as being independent or orthogonal, but contained varying numbers of overlapping items. Knapp (1976) believed that the POI focused on maximising convergent validity and interpretive usefulness rather than on homogeneity and factorial purity of the scales.

Wise and Davis (1975, p. 854) believed that their findings support Silver and Fisher's contention (1968). It was found that the 1966 version of the POI does not only measure orthogonal traits but also several overlapping characteristics. Their findings showed that the more items two scales share, the higher their correlation, and that the more items within a particular scale, the higher its correlation with other scales and to the same extent, the higher its reliability.

3.3.3 Factorial studies

In terms of factorial analysis, most of the factorial studies

have been obscured by methodological difficulties. The overall conclusion is that the POI reflects a complex aggregation of factors and, therefore, is not designed for factor analytic approaches (Knapp, 1976, p. 89).

Wise and Davis (1975, p. 847) state that the POI has been subjected to considerable evaluation by researchers who have investigated its factorial structure. These researchers include Le May and Damm (1970), and Silverstein and Fisher (1968).

Thompson and Daniel (1996, pp. 197-198) explored the reporting of factor analysis results as part of construct validation according to the latest views of measurement validity. The factorial validity of a test is given by its loadings in common factors.

3.3.4 Critical analysis of existing reliability and validity data

Jones (1977, pp. 226-227) claimed that the POI is constructed around an individual's ability to "see meaningful relationships between opposites". In each pair of forced-choice items there is a statement indicating that the conflict has not been resolved.

A sample item:

- Item 12 a) I feel guilty when I am selfish.
 b) I don't feel guilty when I am selfish.

A self-actualizing individual would choose 12 (b) as this would indicate that he or she has resolved the traditional conflict between selfishness and subsequent guilt. However, an individual who selects 12 (a) is aware of his or her guilt but is not inhibited from admitting it. This individual would be scored as a non-self-actualizing individual. This illustrates a paradox as the ability to actualize on one plane will prevent self-actualization on another.

According to Weiss (1991, p. 265), "the measurement of self-actualization is an exclusive quest that cannot succeed until the extensive fragmentation and conflict about its theory and construct definition are resolved".

Ray (1986, p. 591) claimed that there is insufficient data on the reliability of the POI scales and that the data available shows the scales as being vastly less reliable than is usually required in an instrument used for individual diagnosis or even for research into group characteristics.

Hattie (1986, p. 593) differs from Ray (1986) on this point, claiming that the POI has generally good psychometric properties. The factor structure is well-identified and meaningful. The construct validity is seen as convincing.

Fogarty (1994, p. 435) measured change in student self-actualization with the use of the Personal Orientation Inventory. The findings indicated that despite the criticism surrounding the psychometric properties of the Personal Orientation Inventory, it does appear to measure dimensions that are related to self-actualization.

3.4 SUMMARY

This chapter identified various tests and questionnaires that are used to measure self-actualization. For the purpose of this research, the emphasis fell on the Personal Orientation Inventory (POI). Relevant information was reported in order to formulate a scientific reason for the use of the POI as the measuring instrument. The various scales illustrate the connection in measuring the characteristics of a self-actualizing individual. The numerous studies that were conducted around the POI establish its reliability.

With reference to the literature review of this research (1.3.2.), it can be concluded that the second aim, namely, to

formulate arguments for the inclusion of the POI as a measuring instrument of self-actualization has been addressed.

CHAPTER 4 THE APPLICABILITY OF SELF-ACTUALIZATION AND THE POI WITHIN INDUSTRIAL PSYCHOLOGY

The objective of this chapter is to focus on the applicability of self-actualization and the POI within industrial psychology. One needs to establish the relationship between these concepts. Therefore, this chapter includes a detailed description of the applicability of self-actualization and the POI within industrial psychology. The application of the concept of self-actualization as measured by the POI in the industrial setting provides the area of research for this chapter.

4.1 THE APPLICABILITY OF SELF-ACTUALIZATION

Cartwright (1979, pp. 18-21) looked at what Maslow's theory has accomplished and found that it has provided new insights for many disciplines including Personal Psychology, Industrial Psychology and Group Dynamics.

4.1.1. Self-actualization within the workplace

Whitsett (1980) defines work as a meaningful task that provides an individual with a chance to become more competent by achieving psychological growth.

Lester (1971, pp. 777-778) believed that the concept of self-actualization influences the individual within the workplace. He saw Maslow's work as influential among businessmen.

Feist (1994, p. 627) proposed that workers would be more productive in the workplace if their need for self-esteem and self-actualization was activated.

Maslow (1967) saw the self-actualizing individual to be devoted to some type of task or vocation. He or she has a devotion and dedication to his or her task or work. This individual displays

a "natural" quality that illustrates a feeling that this individual is suited to and right for his or her job. One can sense a harmony between the self-actualized individual and his or her job. This individual and the job fit and belong together as if both were meant for each other (Maslow, 1967, pp. 93-105).

A self-actualizing individual tends to identify his or her work as part of himself or herself. If this individual is asked what he or she does, he or she will answer by identifying his or her "calling", for example "I am a lawyer". This labels his or her identity. If asked what he or she would rather be, there would not be a ready answer. However, Maslow identified the fact that occasionally a job or profession can be functionally autonomous (Maslow, 1967, pp. 93-105).

A self-actualizing individual's tasks are appreciated because they personify dedication to intrinsic values. These values are loved rather than the job as such. Thus a lawyer loves law because it is justice and not just a set of rules. A self-actualizing individual obtains gratification through his or her work. This fulfilment includes enjoying doing well, being practical and shrewd, being effective, responding to a challenge in a job, improving things, enjoying bringing law and order to a chaotic situation, feeling it is a pity for talent to be wasted, feeling that every individual should have an opportunity to develop to their highest potential, doing things well, responding to responsibility and considering their work to be worthwhile, important and essential (Maslow, 1967, pp. 93-105).

Cox (1971) stated that the theory of self-actualization has been used in many organisations and settings. It has resulted in the development of advertising and public health. Maslow's vision has a penetrating impact "on what we value, how we think and learn, the very way we live". Maslow highlights the nature of human potential by encouraging individuals to reach within themselves and realise the greatness within.

According to Sassoon (1988, pp. 114-115), evidence has shown that hard work can lead to more failures than successes. It can result in physical and mental fatigue, stress, depression and "burn out". However, if one looks at a self-actualizing individual, it will be found that this individual works hard. This is not the primary reason for their success. This individual is in a work environment that agrees with his or her temperament and aspirations rather than struggling for enrichment of others. Hard work is a pleasure and noble pursuit. Thus, an individual cannot build a future on a job that he or she despises, is not suited to or that is below his or her potential.

Lichtman and Hunt (1971, p. 276) wrote an article on organisational theory and its assumptions about personality. They examined Maslow's theoretical formulations (1954) emphasising people's inherent need to use their capacities and skill in a mature and productive way. Lichtman and Hunt concluded that since affiliation in a workplace is a core aspect of people's lives, it is to the benefit of the organisation and the individual within that organisation, to change the organisation's structure to accommodate the human quest for self-actualization.

Whitsett (1980) believed that industry's need for creative, independent thinking individuals is increasing due to improved technology, research and development. Industry should provide more growth opportunities to improve jobs.

Within a workplace, an individual contributes energy to attain a reward. Good fortune occurs when an individual is paid for doing what he or she passionately loves to do. Money is welcome, but it is not the ultimate reward. A salary check is only a small part of an individual's "pay". Self-actualizing work is its own intrinsic reward, transforming money into an *epiphenomenon*, a by-product (Maslow, 1967, pp. 93-105).

4.1.2 Organisational leadership and management

Schott (1992, p. 113) identified self-actualization in the workplace by looking at organisational leadership and management. Maslow's concept of *Eupsychian Management* describes the manager as a mentally healthy, competent, self-actualizing individual. Maslow believed that there is considerable potential for the development of self-actualizing leaders and managers in the workplace. One creative channel that self-actualization is developed through is commitment to work. This is an individual who works hard at something that he or she considers to be important and worthwhile.

Schott's article (1992, pp. 106-120) examines Maslow's contributions to the understanding of organisational leadership. Schott examined the influence that Carl Jung had on the development of Maslow's concept of self-actualization. Maslow's concept of a positive growth tendency in the organism (1954) that directs it to a fuller development is compatible with Jung's philosophy. Schott (1992) describes important similarities between Jung's philosophy and Maslow's concept of self-actualization. Both are characterised by personal growth.

Meyer, Moore and Viljoen (1993, pp. 369-371) believed that Maslow's theory had many good points. Opportunities need to be created for the fulfilment of growth. This has important implications for industry. Maslow implemented the Eupsychian working conditions. This means that an individual's higher values and his or her quest for self-actualization should also be recognised.

Cox (1970) believed that Maslow had an impact on work and management. Cox quoted Maslow (1971) as stating that "human nature includes the need for meaning, for doing what is worthwhile and preferring to do it well". Maslow found that his theories could be applied to organisational management. A policy that embraces the holistic nature of humans by focusing on human

potential could prove to be financially profitable. Maslow introduced the concepts of "utopian leadership" and "eupsychian management". Maslow used the word "Eupsychia" to describe organisations that were moving toward his understanding of psychological health. Maslow believed that the organisation has the potential to transform and support self-actualizing individuals. Personal growth and self-esteem are as important as economic security. This work can be seen as a psychological experience and a pursuit of economic growth (Maslow, 1971, pp. 256-257).

4.1.3 Independence from the external environment

The following articles illustrate that a self-actualizing individual is not dependant on the external environment. However, a self-actualizing individual ultimately benefits society.

Maslow believed that although the external environment may help individuals to actualize their biological characteristics, it does not teach them to be human. Maslow (1970) hypothesised that human nature is inborn and not made. Human nature has a built-in structure that is comprised of potentialities and values that are intrinsic and common to all humans. Human needs and values are considered to be instinctive because of biological genetic and universal characteristics (Potkay & Allen, 1986, p. 245).

Maslow (1968) proposed that a self-actualizing individual is less dependent on the environment. A self-actualizing individual is self-efficient and self-centred. This individual is governed by inner determinations rather than the social environment. He or she is a law to his or her own nature, talents, potentialities, creativity and resources. As this individual does not depend on others, he or she is less hostile. He or she is less concerned about honour, prestige, recognition and rewards (Maslow, 1968, pp. 34-35).

Maslow (1970) views the external environment as "primarily a means to the person's self actualizing ends". The self-actualizing individual is psychologically independent of his or her environment and sees it as an expression of his or her own real self. This cannot be viewed in a negative sense because the "real self" only includes positive, healthy values, which will be developed under the correct circumstances (Phillips, Watkins & Noll, 1974, p. 54).

Whitsett (1980) proposed that one of man's important potentials is attaining independence from environmental influences. Self-actualization is defined as fulfilling one's potential. This independence must be considered to be important to mental health as demonstrated by self-actualization.

Johado (1958) conducted intensive studies of mental health. Independence and autonomy were found to be important aspects of mental health. Johada referred to Maslow's theory of self-actualization. In 1954, Maslow hypothesised that one of the most extensive characteristics of a self-actualizing individual is "their relative independence of the physical and social environment". Whitsett (1980) believed that this individual defies enculturation and proclaims an inner detachment from the environment. Maslow believed that this individual conforms to the values of the environment if he or she wishes, which illustrates that he or she is truly independent. This individual is governed by the rule of his or her own characteristics, as opposed to the rules of society.

Maslow's vision of the ideal liberal society in which individual development was dominant was termed *Eupsychia*. Maslow included the study of values that guided his original sample of self-actualizing individuals and personal selection of individuals whom he considered self-actualized. This represents liberal values (Buss, 1979, pp. 43-54).

Buss (1979) viewed Maslow's elite group of self-actualizing individuals as the psychological embodiment of the social elite who are the society's decision makers. This theory is identified as a liberal psychological theory that includes a social-historical contradiction between democracy and elitism (Buss, 1979, pp. 43-54).

In 1979, Das wrote an article on the effect that the social environment has on self-actualization. Maslow describes the normal process and the outcomes of self-actualization, also looking at the pathological phenomena that result from the distortion of the process. Maslow viewed self-actualization as the organism's natural tendency to enhance itself. The social environment in which the organism exists may promote or hinder the expression of this tendency. The social environment may completely prevent the self-actualization tendency from emerging. Das (1979) believed that under favourable conditions, self-actualization occurs almost spontaneously. However in his study, he found that in Eastern religious traditions, this only occurred after a long process of rigid discipline (Das, 1989, p. 13).

Shaw and Colimore (1988, pp. 51-64) viewed psychological theories in terms of the social-economic environment in which they exist. They described Maslow as one of the most "articulate proponents of humanistic psychology". Maslow is recognised for his objective to uplift human nature through the transformation of society. Maslow claimed that, under appropriate circumstances, each individual will develop selfish interests that will ultimately benefit society. Maslow's ideal society, which he termed Eupsychian, excludes non-actualized individuals. Maslow (1979) believed that a society needs to be created where an individual could freely actualize his or her talents to their full extent.

4.1.4 Metamotivations

Maslow (1968) identified characteristics that indicate "good" jobs and "good" working conditions. This enables an individual

to move toward B-Values. B-values describe the characteristics of a self-actualizing individual. These include acceptance, ego transcendence, freshness of cognition, more peak experiences, truth, goodness, wholeness, aliveness, uniqueness, perfection and self-sufficiency. Maslow hypothesised that B-values are ultimate satisfiers, irrespective of whether or not they have been consciously sought, preferred or needed. An individual in a less desirable job, values safety and security. However, an individual in a more desirable job most often values high possibilities of self-actualization. This shows a special case of "good" environmental conditions. The work conditions produce greater wholeness and honesty (Maslow, 1968, pp. 55-60).

Drapela (1987, p. 142) proposed that Maslow's theory of self-actualization can assist in psychology. It helps professionals who are involved in counselling or in organisational consultation by enabling them to focus on the concept of self-actualization, the characteristics of a self-actualizing individual, peak experiences and B-values.

B-values include spontaneity, uniqueness and self-suffering. These values are almost identical to the outlook inspired by peak experiences. B-values and peak experiences assist in providing evidence for identifying the characteristics of a self-actualizing individual (Drapela, 1987, p. 142).

Maslow postulates that a peak-experience is an intense period of self-actualization and the *sine qua non* of a healthy personality. Peak-experience is seen as the ultimate experience in unity and wholeness of the personality and is a paradigm of its highest potential. It represents the growth of latent aspects of a deeper, inner nature, which is seldom recognised and often remains unnoticed and undeveloped. Maslow believes that many individuals have encountered a peak experience, although this experience is denied or unrecognised. Hypothetically, the higher the degree of self-actualization, the higher the frequency and greater the depth of peak experiences (Frick, 1971, p. 167).

Daniels (1988, pp. 7-38) wrote an article where he hypothesised that Maslow's interest in peak experiences is derived from his belief that they comprise ways whereby one may contact one's real self directly. Similar beliefs are common in most religious systems. Many religions have been developed to encourage types of "mystical experiences".

Mathes (1978, pp. 215-221) believed that one of Maslow's most important contributions as a humanistic psychologist, was his approach to values. Maslow suggested that values have an organismic or biological basis and can therefore be studied empirically. Maslow questioned the values of a self-actualizing individual versus other individuals who were open to experience. It was found that this individual values a set of qualities that were termed metavalues. These values include truth, goodness, uniqueness, perfection, order and self-sufficiency. These values are an estimation of the good.

Mathes (1978) conducted a study by correlating scores on a measure of self-actualization with the sanction of metavalues. Using the Personal Orientation Inventory (POI), Mathes found that it supported the hypothesis that a self-actualizing individual is more likely to endorse metavalues than a non-self-actualizing individual. This study confirmed Maslow's conclusions (Mathes, 1978, pp. 215-221).

Maslow believed that each self-actualized subject that he worked with, somehow fitted the description of metamotivation. However, there is also a percentage of other less healthy individuals who also fit this description. This might include individuals with special talents or who find themselves in beneficial circumstances. Maslow speculated that perhaps all individuals are metamotivated to some degree (Maslow, 1967, pp. 93-105).

Maslow (1954) hypothesised that self-actualization and accompanying metamotivations are generically based. It is the height of an intrinsic growth process and successful movement

through a hierarchy of latent potentials, values and needs (Frick, 1971 p. 164).

Daniels (1988, pp. 30-31) described Maslow's theory of metamotivation as suggesting that a self-actualizing individual is inclined to be motivated by non-personal, objective and universal "values of being" (B-Values). These "metamotivations" include truth, beauty, justice, perfection and aliveness. A metamotivational individual identifies important tasks of work that symbolise the B-values that benefit other individuals and humanity as a whole.

4.2 THE APPLICABILITY OF THE POI

The face of industry is moving from the search for power to the search for greater wealth of personal satisfaction and fulfilment. This gives one the opportunity to experience emotional growth within the industrial setting (Knapp, 1976, p. 47).

Maslow's observations of a California electronics plant (1962) resulted in a theoretical framework whereby research on self-actualization could be applied within an industrial organisation. The POI, as an objective measure of self-actualization, made it possible to test specific hypotheses based on this theory (Knapp, 1976, p. 42).

Knapp (1976, pp. 42-43) stated that Margulies (1969) conducted one of the earliest applications of the POI within an industrial setting. This study was based on the effects of organisational climate on a self-actualizing individual. This study occurred at the same time and location that Maslow (1965) was gathering material for his book *Eupsychian management*. Results of this study provided evidence that the identification and description of organisational cultures are associated with particular degrees of individual growth.

Knapp (1976, pp. 43-44) described a number of studies that relate the concept of self-actualization to the industry. Ladenberger (1971) conducted a study on the relationship of self-actualization to various occupational groups and levels of functioning within an organisation. Lessner and Knapp (1974) made use of the POI to test hypotheses concerning the levels of self-actualization of small business owners.

The extensive use of the POI as a measuring instrument reflects industry's growing awareness of the need to foster personal growth (Knapp, 1976, p. 46).

The applicability of the POI in industrial psychology is illustrated in the method of this research process whereby second-year industrial psychology students completed the test as part of an assignment for their studies.

4.3 APPLICABILITY OF SELF-ACTUALIZATION IN INDUSTRIAL PSYCHOLOGY

The following section demonstrates the applicability of self-actualization within industrial psychology in the development of the organisation, career and employment.

4.3.1 Organisational development

Ivancevich and Matteson (1993, p. 72) defined organisational development as a "normative reeducation strategy intended to affect systems of beliefs, values and attitudes within an organisation so that it can adapt better to the accelerated role of change in technology, in the industrial environment and society in general". The organisational development process may attempt to educate personnel to modify behaviour to ensure consistency with any formal restructuring of the organisation.

Uhlaner (1970) argued that more behavioural research relating to human work should be carried out in a total environment framework

in order to explore the possible interaction. Various human values (such as health, safety and satisfaction) may contribute to more effective work and improved work performance (McCormick & Ilgen, 1985, p. 7).

4.3.2 Career development

One needs to assign an individual to positions that will contribute to the growth and development of his or her career. London (1983) defined career motivation as "...the set of individual characteristics and associated career decisions and behaviors that reflect the individual's resilience to any unfavorable career conditions" (McCormick & Ilgen, 1989, pp. 259-261).

Hall and Nougaim (1968, pp. 28-29) described the three stages of career development in terms of Maslow's hierarchy of needs. The initial stage would be characterised by the concern for safety. The next stage, striving for advancement, would consist of the need for achievement. The last stage occurs when the individual attempts to relate his or her efforts to a "higher cause" by showing commitment to the organisation or service to the youth. The concern for meaning and a sense of purpose in one's life would be a means of self-actualization.

4.3.3 Employment development

An organisation needs to invest in itself to meet environmental demands. Development efforts include training programmes for personnel as well as a psychological and sociological approach (Ivancevich & Matteson, 1993, p. 35).

To initiate change, one must first assess or measure relevant information about the individual and then evaluate that information in terms of its implications for the individual's career. Assessment centres are used to generate career data, by

using both multiple assessment techniques and simultaneously oriented tests to evaluate the individual. Assessment centres have the ability to measure specific behaviour dimensions of the individual concerned (McCormick & Ilgen, 1989, pp. 252-257).

4.4 SUMMARY

The objective of this chapter was to determine the applicability of self-actualization and the POI within industrial psychology. The focus was on the role of self-actualization and the POI within industry. The applicability of self-actualization was discussed in terms of the workplace, organisational leadership and management, the external environment and metamotivations. Relevant industrial psychological concepts such as organisational development, career development and employment development were discussed to illustrate the applicable role that self-actualization plays in industry.

Encouraging individuals to reach their full potential in industry only strengthens the applicability of self-actualization and the POI in industrial psychology.

This chapter paved the way to establishing the relationship between self-actualization and the POI. It also bridged the gap between the literature review and the empirical study. The empirical study and the results are discussed in the following chapters.

With reference to the literature review of this research (1.3.2.), it may be concluded that the third aim, namely, to determine the applicability of self-actualization and the POI within industrial psychology has been addressed.

CHAPTER 5 EMPIRICAL STUDY

The objective of this chapter is to discuss the empirical research conducted on the POI.

5.1 EMPIRICAL OBJECTIVES

The following objectives were formulated for the empirical study:

- to conduct a Confirmatory Factor Analysis on the Personal Orientation Inventory
- to formulate conclusions and recommendations on the results as applied to Industrial Psychology

To achieve these objectives, the following steps were carried out:

5.2 STEP 1: SELECTION AND DESCRIPTION OF THE POPULATION AND SAMPLE

With reference to the methodology of this research, step 1 of the empirical study, namely, the selection and description of the population and sample (see section 1.7) is discussed next.

The motivation behind the selection of the population was accessibility. This population was selected because the topic was relevant to the subject's field of study. The population (N=842) consisted of Unisa students who were completing their second year of Industrial Psychology during 1995. A random sample (N=495) was drawn from the population and used for the purpose of the empirical study.

The following tables illustrate the descriptive statistics of the sample (N=495) to provide a profile of the respondents in terms of age and gender.

5.2.1 Age distribution

TABLE 5.1 Age distribution

| AGE | FREQUENCY | PERCENTAGE (%) |
|-------------------|------------|----------------|
| 0-40 | 7 | 1.41 |
| 41-50 | 72 | 14.54 |
| 51-60 | 239 | 48.28 |
| 61-70 | 176 | 35.55 |
| Frequency Missing | 1 | 0.20 |
| TOTAL | 495 | 100.00 |

The above table illustrates the distribution of age group, frequency and percentages. The age distribution of the sample varied from 17 to 70 years old. Most of the individuals in the sample were between 51 and 60 years of age.

5.2.2 Gender

TABLE 5.2. Gender distribution

| GENDER | FREQUENCY | PERCENTAGE (%) |
|-------------------|------------|----------------|
| Not indicated | 3 | 0.60 |
| Male | 314 | 63.43 |
| Female | 177 | 35.75 |
| Frequency Missing | 1 | 0.20 |
| TOTAL | 495 | 100.00 |

The above table illustrates the distribution of gender, frequency and percentages. The sample consisted of a majority of male subjects.

5.3 STEP 2: DISCUSSION AND MOTIVATION OF THE MEASURING INSTRUMENT

The POI developed by Shostrom (1963) measures values and behaviours that are evident in the development of optimal psychological functioning.

The POI was based on value concepts, broad personal and social relevance, representing a comprehensive measure of values and behaviours that appear to be significant in the development of self-actualization.

The validity of the POI (as discussed in ch. 3) illustrates that the most important test of the POI is that it should differentiate between an individual who is self-actualized and an individual who is not. It indicates the difference between high and low self-actualizing behaviour.

The reliability of the POI (as discussed in ch. 3) indicates that numerous studies have been conducted on the POI to establish its reliability.

5.4 STEP 3: DATA COLLECTION

The data was collected to conduct the empirical study. The POI was administered to a sample of 495 subjects in order to obtain the means, standard deviation and intercorrelations of the scores. The POI was administered by means of a tutorial. The tutorial included a letter explaining how the subjects should complete the instrument. The subjects completed the POI as part of an assignment during their second-year studies in Industrial Psychology.

5.5 STEP 4: DATA ANALYSIS

This section will illustrate the statistical methods used to analyse the data.

The analysis was begun by calculating raw scores using the SAS system. Verimax rotation was completed on these scores in order to interpret the factors more adequately. A number of correlations were then calculated using the final communality estimates in order to identify the correlation with the verimax rotation.

Correlation coefficients enable one to identify the relationship between the two variables and to measure the strength of this relationship (Howell, 1989, p. 100).

Correlation analysis completed for the factors identified determines the reliability of the scores. This was completed within the SAS system (SAS Institute, 1990).

Pearson's Correlation Coefficient (r) is the most common correlation coefficient (Howell, 1989, p. 100). This was used as part of a Confirmatory Factor Analysis by conducting a correlational analysis.

The correlation coefficients for the POI were used as input data for LISREL in order to perform a Confirmatory Factor Analysis (as shown in Table 6.10).

The Linear Structural Relations (LISREL) computer program, was specifically developed within the SAS (SAS Institute, 1990) as a technique to tabulate the data.

The covariance structure model, as a statistical model, requires sophisticated software for estimation. LISREL stimulates the covariance structure model. LISREL is not only software but also a statistical model that analyses data (Long, 1983, p. 7).

The Confirmatory Model was used as it can provide correlations among common factors. Structural relations can be incorporated among latent variables in what is known as the Covariance Structural Model or the LISREL Model (see Model 1). The

Confirmatory Factor Model is a powerful statistical model. It has the ability to test specific structures suggested by substantive theory (Long, 1983, pp. 16-17; 79-80).

Data gathered from the POI and entered into LISREL were analysed according to Standardisation, Factor Analysis, Exploratory Factor Analysis and Confirmatory Factor Analysis.

5.5.1 Standardisation

At first the data were expressed as s scores. S scores can be defined as the number of standard deviations above or below the mean (Howell, 1989, p. 80).

They were then converted to McCall T scores. Each score on the POI is transformed to avoid negative scores. It yields a mean of 50 and a standard deviation of 10. Each respondent's score on the POI was transformed.

For the purpose of the this research, the mean scores were still used as input in order to conduct a Confirmatory Factor Analysis.

5.5.2 Factor analysis

Factor analysis is used to make a large number of correlations more manageable by reducing the interrelations among few factors (Tosi & Hoffman, 1971, pp. 87-88). Exploratory Factor Analysis and Confirmatory Factor Analysis are two types of Factor Analysis.

5.5.2.1 *Exploratory Factor Analysis*

Exploratory Factor Analysis explores empirical data in order to observe characteristic features and intriguing relationships without imposing a definite model on the data. An Exploratory Factor Analysis may be either structure generating, model generating or hypothesis generating. This technique is often used

to observe and assess latent scores of variation and covariation in observed measurables. It is useful in the early stages of experimentation or test development (Jöreskog & Sörbom, 1988, p. 96).

LISREL provides several statistics which suggest ways to modify the theoretical model, assess the dimensionality of the constructs and estimate the reliability of the observed variables in measuring model constructs (Hughes, Price & Marrs, 1986, p. 129).

The raw data was entered for Factor Analysis. This was completed with verimax rotation by means of the SAS program (SAS, 1990).

Factor Analysis with verimax rotation and Communalities Estimates are two methods used to conduct Exploratory Factor Analysis in order to interpret the results and determine the reliability of the measures.

a Factor analysis with verimax rotation

Many methods of factor analysis produce results that are difficult or impossible to interpret. Thurstone (1941) believed that it was necessary to rotate factor matrices in order to interpret them adequately. In order to understand the configurations of tests or variables in factor space, the arbitrary reference axes must be rotated. This will show the "best" way to view the variables in n -dimensional space (Kerlinger, 1986, p. 579).

b Communalities estimates

Communality estimates consist of three different methods to determine which proportion of the variance is unique and which proportion is shared with other variables in the matrix (Loehlin, 1987, p. 141).

The three methods are as follows:

i Highest correlation of variables

Variables that share high variances with other variables in the matrix will have high correlations with these variables. This will result in high communality estimates. Variables that do not have much in common with other variables will have low communality estimates. This quick and easy method is often quite adequate (Loehlin, 1987, pp. 141-142).

ii Squared multiple correlations

This is a more sophisticated method. This method estimates the communality of a given variable with the use of squared multiple correlation of that variable with all the remaining variables in the matrix (Loehlin, 1987, p. 143).

iii Iterative improvement of the estimate

One needs to obtain a factor pattern matrix P and use this to obtain a set of communalities implied by the factor solution. This process involves many calculations. However it is easily programmed for a computer and many factor analysis programs provide iterative improvement of initial communality estimates as a option (Loehlin, 1987, pp. 143-144).

The factors are squared to give the Eigen values. The h^2 score is the Eigen value that stands for the final estimation of communalities. The h^2 score illustrates the variance between each of the factors.

Eigen values are statistics that inform researchers about the variance accounted for before factors are rotated. However, one can compute the statistics after rotation has occurred by summing up the squared structure coefficients in a given component.

Rotation does redistribute variance across the factors (Thompson & Daniel, 1996, p. 200-201).

This method will be used for the purpose of this research.

5.2.2.2 *Confirmatory Factor Analysis*

Confirmatory Factor Analysis is a model built to describe, explain or account for the empirical data with the use of few parameters. This model is based on a priori information about the data structure. It may be in the form of a specified theory or hypothesis. LISREL is very useful in confirmatory studies. In this empirical study, LISREL was used to complete the Confirmatory Factor Analysis (Jöreskog & Sörbom, 1988, p. 96).

The reliability of the measures needs to be determined before completing Confirmatory Factor Analysis. The Pearson Correlation Coefficient for the POI dimension is used as input data for LISREL to be able to perform the Confirmatory Factor Analysis.

LISREL as a statistical technique will be discussed in terms of description and interpretation. This enables one to obtain a clear understanding of this method in order to conduct a Confirmatory Factor Analysis of the POI.

a Description of the LISREL

The LISREL program is specifically designed to analyse latent variable models and directly observed models. LISREL is able to analyse data from a single sample as well as analysing data from several populations simultaneously. LISREL also enables one to estimate mean structures (Jöreskog & Sörbom, 1988, p. 3).

The LISREL model is a formal mathematical model. This model requires substantive material for each application. The meaning of terms varies between the different applications (Jöreskog & Sörbom, 1988, p. 3).

The LISREL model consists of two models: the measurement model and the structural equation model. The measurement model describes the measurement properties (validities and reliabilities) of observed variables. The structural equation model describes the causal effects and unexplained variance of latent variables (Jöreskog & Sörbom, 1988, p. 2).

It is necessary to specify the structured model so that the researcher is able to distinguish between latent variables that are exogenous and those that are endogenous. Exogenous variables are synonymous with independent variables. They cause fluctuation in the values of other latent variables within the model and are influenced by other factors external to the model. Sex, age and social-economic status are examples of external factors. Endogenous variables are synonymous with dependent variables. These variables are directly or indirectly influenced by exogenous variables in the model (Byrne, 1989:6).

b Interpretation of the LISREL

Correlation analysis is completed for the factors to determine the reliability of the scores. This is carried out with the use of the Cronbach Coefficient Alpha by looking at the raw variables and the standardised variables. This is concluded within the SAS system (SAS, 1990).

i Parameter estimates

Parameter estimates need to have the correct sign and size. Unreasonable values of parameter estimates are negative variances, correlations that are larger than one in magnitude, covariance or correlation matrices that are not positively definite (Jöreskog & Sörbom, 1988, p. 41).

All parameter estimates ($p > 0.01$ for all parameter estimates) at the bottom of the diagram are meaningful. However, erroneous

values in covariance or correlation matrices often lead to negative matrices (Jöreskog & Sörbom, 1988, p. 277).

ii Goodness-of-fit

LISREL provides the overall measures of the fit of the hypothesised model to the data. These statistics include goodness-of-fit statistics (Hughes et al., 1986, p. 130). The LISREL program provides a hierarchy of goodness-of-fit statistics that enables one to evaluate the quality of the model (Hughes et al., 1986, p. 140).

Goodness-of-fit criteria guide the search for the best fitting solution as well as helping to evaluate the solution when it is obtained (Loehlin, 1987, p. 55).

The principle behind goodness-of-fit statistics is that the smaller the residuals, the better the fit. The larger the residuals, the poorer the fit (Kerlinger, 1986, p. 603).

With regard to indices that fit, one needs to place more emphasis on indices that evaluate the parsimony of the model being researched. If one "frees" a parameter in a Confirmatory Analysis, one will obtain an exact fit for the data for this estimate. The "fit" is partially a function of how many parameters are freed. Thus, one needs to consider models' parsimony when evaluating fitness because computing fit statistics is weighted by parsimony indices. The most parsimonious tests of fitness involve fitting parameters from one study to independent data. Constraining factors that are uncorrelated may affect estimation of the factor parameters and may distort perception of the overall model fit (Thompson and Daniel, 1996 pp. 204-205).

5.6 FORMULATION OF HYPOTHESES

In order to formulate a hypothesis, one needs to identify the

criteria to test the hypothesis and the objective of the research. Robinson (1987, p. 48) maintained that for a hypothesis to be acceptable, it should be a living hypothesis. However, it must not be a forced option or a momentous hypothesis.

The first theoretical model is the model whereby individuals can be divided into two categories, namely, self-actualized and not self-actualized. This model therefore postulates that there are two factors of self-actualization or two latent variables.

The second theoretical model is a model that postulates that there are 12 factors of self-actualization or 12 manifest variables. These factors are time competence, support ratio, self-actualizing value, existentialism, feeling reactivity, spontaneity, self-regard, self-acceptance, nature of humankind, constructive synergy, acceptance of aggression and capacity for intimate contact.

Two hypotheses were identified to establish whether the POI factor structure confirms the theoretical model of self-actualization.

The null hypothesis is denoted by H_0 and the alternative by H_1 or H_2 . The null hypothesis is the hypothesis that is being tested and the alternative is the hypothesis that will be viable if the null hypothesis is rejected.

The following hypotheses were formulated to meet the above criteria for the formulation of hypotheses and to cover the aims of this research.

Hypothesis 1:

H0.1: The results of the Confirmatory Factor Analysis of the POI do not confirm the theoretical model of two postulated (latent) variables of self-actualization.

H1.1: The results of the Confirmatory Factor Analysis of the POI confirm the theoretical model of two postulated (latent) variables of self-actualization.

Hypothesis 2:

H0.2: The results of the Confirmatory Factor Analysis of the POI do not confirm the theoretical model of 12 postulated (manifest) variables of self-actualization.

H1.2: The results of the Confirmatory Factor Analysis of the POI confirm the theoretical model of 12 postulated (manifest) variables of self-actualization.

5.7 SUMMARY

Tosi and Lindawood (1965, p. 222) concluded that the POI should be regarded as a research instrument. They believed that the POI could not be used as a diagnostic instrument until more constructs are developed to measure the specific behaviours that are characteristic of self-actualizing individuals, as developed by Maslow.

LISREL allows one to determine whether the hypothesised model fits the data. Statistical tests assess the significance of factor and orthogonality of the factors (Houts & Kassab, 1990, p. 1059).

This chapter focused on research methodology. The POI was administered to determine behaviour and values that influence the development of the self-actualizing individual. The POI was used for the purpose of this study to determine self-actualization. LISREL (Linear Structural Relations) was used to determine Confirmatory Factor Analysis.

Two hypotheses were identified in order to establish whether the POI factor structure confirms the theoretical model of self-actualization.

With reference to the empirical study of this research (1.3.2.), it can be concluded that the specific aims have been addressed.

CHAPTER 6 RESEARCH RESULTS

The objective of this chapter is to report and interpret the results on the Personal Orientation Inventory (POI) with the specific aim of integrating the data and formulating conclusions. This is the fifth step of the empirical study.

Implementation of the results of the measurements is presented and discussed.

This research is categorised as exploratory research. This implies that the hypotheses were developed as a result of the research rather than the research being guided by the hypotheses (Mouton & Marais, 1994, pp. 42-46).

The hypotheses were denoted in the previous chapter. This chapter will establish whether or not the hypotheses are rejected.

Descriptive statistics of the sample of 495 subjects are illustrated by the variables, means and standard deviations. The factor analysis with varimax rotation is derived from these figures. This paves the way to illustrate the Confirmatory Factor Analysis, enabling one to draw up a Confirmatory Factor Model.

6.1 DESCRIPTIVE STATISTICS

This table shows items, means and standard deviation among the POI scales.

TABLE 6.1 RAW SCORES USING THE SAS SYSTEM
 (Items, means and standard deviation among the POI
 scales N=495)

| VARIABLE | MEAN | N | STANDARD DEVIATION |
|----------|-------------|-----|-----------------------|
| POI1 | 9.4141414 | 495 | 2.7070537 |
| POI2 | 116.7414141 | 495 | 8.5637525 |
| POI3 | 29.4989899 | 495 | 2.5899797 |
| POI4 | 22.6000000 | 495 | 3.6725263 |
| POI5 | 92.5656566 | 495 | 2.5647944 |
| POI6 | 16.1717172 | 495 | 2.0363121 |
| POI7 | 163.9252525 | 495 | 1.7263347 |
| POI8 | 17.3010101 | 495 | 2.9054429 |
| POI9 | 17.0545455 | 495 | 2.1947339 |
| POI10 | 9.7191919 | 495 | 1.3270524 |
| POI11 | 23.2626263 | 495 | 2.5049985 |
| POI12 | 20.9818182 | 495 | 3.1918534 |

As shown by Knapp (1976, p. 35) "in comparison to adult samples, early college means fall generally in a t-score range of 40 to 45". The above research results illustrate a "fake good profile" and an intellectualised or "pseudo actualizing range". Faking is a considerable attempt to present oneself in a favourable light and it results in a generally depressed POI profile. The intellectualised responses are based on a knowledge of the underlying theoretical concepts which results in a hyper-evaluated profile. The effect of these two concepts is response distortion (Knapp, 1976, p. 72).

6.2 EXPLORATORY FACTOR ANALYSIS

6.2.1 Factor analysis with verimax rotation

Verimax rotation enables one to interpret the factors more adequately.

TABLE 6.2 **ROTATED FACTOR PATTERN**

| | | FACTOR 1 | FACTOR 2 | FACTOR 3 |
|-------|--------------------------|----------|----------|----------|
| POI12 | CAPACITY FOR INTIMACY | 0.78509 | 0.10065 | 0.08932 |
| POI2 | SUPPORT RATIO | 0.77951 | 0.45956 | 0.33517 |
| POI4 | EXISTENTIALISM | 0.72258 | -0.02693 | 0.37394 |
| POI8 | SELF-ACCEPTANCE | 0.70402 | 0.13642 | -0.01165 |
| POI1 | TIME COMPETENCE | 0.67135 | -0.24738 | 0.03601 |
| POI5 | FEELING REACTIVITY | 0.66758 | 0.24086 | 0.03784 |
| POI11 | ACCEPTANCE OF AGGRESSION | 0.57207 | 0.33378 | 0.11705 |
| POI7 | SELF REGARD | 0.03588 | 0.79249 | 0.04333 |
| POI6 | SPONTANEITY | 0.30820 | 0.56847 | 0.13247 |
| POI10 | SYNERGY | 0.15968 | -0.08568 | 0.86914 |
| POI3 | SELF-ACTUALIZING VALUES | -0.08157 | 0.59053 | 0.64498 |
| POI9 | NATURE OF HUMANKIND | 0.16971 | 0.34256 | 0.63707 |

Table 6.2. illustrates factor analysis with verimax rotation. The cut-off point is below a score of 0,3. There are three factors within the concept. The different dimensions are linked together to form these factors:

(1) Factor 1

The scales range from the highest score of 0,78509 to the lowest score of 0,57207. The scores with the highest loadings are capacity for intimacy, support ratio, existentialism, self-acceptance, time competence, feeling reactivity and acceptance of aggression. This factor describes an individual who is an extroverted, self-assured and not hesitant to act on these feelings.

(2) Factor 2

The scales range from the highest score of 0,79249 to the lowest score of 0,56847. These scales have high loadings of self-regard and spontaneity. This factor describes an individual who abides by his or her own rules and trusts his or her instincts.

(3) Factor 3

The scales range from the highest score of 0,86914 to the lowest score of 0,63707. This factor included scales with high loadings on synergy, self-actualizing values and nature of humankind. This factor describes an individual who is optimistic and has a constructive approach to life.

There appears to be an error with POI2. This could be due to parsimonial factors. There is a lack of correlation between the theory and data presented. Both factor 1(0.77951) and factor 2 (0.45956) are above the cut-off point (0.3). As discussed in chapter 5, by constraining factors to be uncorrelated, the estimation of the factor parameters may be affected.

Fewer scales can help satisfy the required condition of parsimony within the theoretical framework from which the POI was derived. Fewer scales facilitate interpretation of the POI (Tosi & Hoffman, 1971, pp. 91-92).

6.2.2 Communaliality estimates

TABLE 6.3 FINAL COMMUNIALITY ESTIMATES

| | FACTOR 1 | h^2 | FACTOR 2 | h^2 | FACTOR 3 | h^2 |
|-------------|----------|------------|----------|------------|----------|------------|
| POI12 | 0.78509 | 0.06163663 | 0.10065 | | 0.08932 | |
| POI2 | 0.77951 | 0.60763584 | 0.45956 | | 0.33517 | |
| POI4 | 0.72258 | 0.52212186 | -0.02693 | | 0.37394 | |
| POI8 | 0.70402 | 0.49564416 | 0.13642 | | -0.01165 | |
| POI1 | 0.67135 | 0.45071082 | -0.24738 | | 0.03601 | |
| POI5 | 0.66758 | 0.44566306 | 0.24086 | | 0.03784 | |
| POI11 | 0.57207 | 0.32726408 | 0.33378 | | 0.11705 | |
| POI7 | 0.03588 | | 0.79249 | 0.6280404 | 0.04333 | |
| POI6 | 0.30820 | | 0.56847 | 0.32315814 | 0.13247 | |
| POI10 | 0.15968 | | -0.08568 | | 0.86914 | 0.75540434 |
| POI3 | -0.08157 | | 0.59053 | | 0.64498 | 0.4159992 |
| POI9 | 0.16971 | | 0.34256 | | 0.63707 | 0.40585818 |
| TOTAL h^2 | | 3.46540613 | | 0.95119854 | | 1.57726172 |

The above table illustrates the factors for each scale. Each scale is squared to calculate the communality estimates. By calculating the final communality estimates, one is able to identify the correlation with the verimax rotation as illustrated in Table 6.2.

TABLE 6.4 VARIANCES EXPLAINED BY EACH FACTOR

| FACTOR 1 | FACTOR 2 | FACTOR 3 |
|----------|----------|----------|
| 3.46541 | 0.95120 | 1.57726 |

The above table illustrates the variance for each factor identified. Factor 1 accounts for 3,47 of the variance for the POI, Factor 2 accounts for 0,95 and Factor 3 accounts for 1,58 of the variance measured for the POI.

The final communality estimates total is 5,993866. This illustrates the total variance measured for the POI. This is acquired by adding up the three factors. This variance indicates that many of the POI scales are irrelevant.

6.2.3 Reliability of the measures

TABLE 6.5 THE RELIABILITY OF THE MEASURES

| FACTOR 1 | FACTOR 2 | FACTOR 3 |
|----------|----------|----------|
| 0.85 | 0.39 | 0.69 |

The above table illustrates the reliability of the measures. Factor 2 yielded an extremely low reliability. The instrument was used to draw conclusions based on group data. Thus, a reliability coefficient of 0,39 could not be viewed as being totally unacceptable. Confirmatory analysis provides more information on the above.

6.3 CONFIRMATORY FACTOR ANALYSIS

TABLE 6.6 PEARSON'S CORRELATION COEFFICIENTS

| | POI1 | POI2 | POI3 | POI4 | POI5 | POI6 | POI7 | POI8 | POI9 | POI10 | POI11 | POI12 |
|-------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| POI 1 | 1.00000 | | | | | | | | | | | |
| POI2 | 0.34500 | 1.00000 | | | | | | | | | | |
| POI3 | -0.07255 | 0.41753 | 1.00000 | | | | | | | | | |
| POI4 | 0.42800 | 0.69757 | 0.14957 | 1.00000 | | | | | | | | |
| POI5 | 0.35863 | 0.62232 | 0.13295 | 0.29056 | 1.00000 | | | | | | | |
| POI6 | 0.07925 | 0.52097 | 0.36102 | 0.30317 | 0.28562 | 1.00000 | | | | | | |
| POI7 | -0.01415 | 0.37222 | 0.43122 | 0.11022 | 0.12067 | 0.24551 | 1.00000 | | | | | |
| POI8 | 0.40801 | 0.63447 | 0.03246 | 0.44461 | 0.32862 | 0.20133 | 0.18328 | 1.00000 | | | | |
| POI9 | 0.06059 | 0.53097 | 0.45566 | 0.29605 | 0.21459 | 0.20444 | 0.27944 | 0.15583 | 1.00000 | | | |
| POI10 | 0.13387 | 0.34005 | 0.44724 | 0.35446 | 0.19248 | 0.16545 | 0.04560 | 0.14640 | 0.36390 | 1.00000 | | |
| POI11 | 0.27080 | 0.58388 | 0.23342 | 0.31026 | 0.50490 | 0.28322 | 0.16464 | 0.38379 | 0.27575 | 0.20613 | 1.00000 | |
| POI12 | 0.31973 | 0.71181 | 0.02828 | 0.65871 | 0.50767 | 0.29511 | 0.11290 | 0.39939 | 0.23305 | 0.16032 | 0.36821 | 1.00000 |

This is illustrated with the following tables on correlational analysis.

TABLE 6.7 CORRELATION ANALYSIS FOR SEVEN "VAR" VARIABLES:
POI12, POI2, POI4, POI8, POI1, POI5, POI11

| Raw Variables | | | Std Variables | |
|---------------------|---------------------------|----------|---------------------------|----------|
| Deleted Variable | Correlation with Total | Alpha | Correlation with Total | Alpha |
| POI12 | 0.676383 | 0.825445 | 0.676383 | 0.825445 |
| POI2 | 0.848216 | 0.799193 | 0.848216 | 0.799193 |
| POI4 | 0.640891 | 0.830664 | 0.640891 | 0.830664 |
| POI8 | 0.581768 | 0.839208 | 0.581768 | 0.839208 |
| POI1 | 0.466024 | 0.855395 | 0.466024 | 0.855395 |
| POI5 | 0.585264 | 0.838708 | 0.585264 | 0.838708 |
| POI11 | 0.537387 | 0.845498 | 0.537387 | 0.845498 |

Cronbach Coefficient Alpha for Factor 1 which included seven dimensions of the POI was as follows:

- for RAW variables : 0,854412
- for STANDARDISED variables: 0,854412

TABLE 6.8 CORRELATION ANALYSIS: 2 'VAR' VARIABLES:
POI6, POI7

| Raw Variables | | | Std. Variables | |
|---------------------|---------------------------|-------|---------------------------|-------|
| Deleted Variable | Correlation with Total | Alpha | Correlation with Total | Alpha |
| POI6 | 0.245512 | . | 0.245512 | . |
| POI7 | 0.245512 | . | 0.245512 | . |

Cronbach Coefficient Alpha for Factor 2 which included 2 dimensions of the POI was as follows:

- for RAW variables : 0,394235
- for STANDARDISED variables: 0,394235

TABLE 6.9 CORRELATION ANALYSIS: THREE "VAR" VARIABLES:
POI10, POI3, POI9

| Raw Variables | | | Std Variables | |
|---------------------|---------------------------|----------|---------------------------|----------|
| Deleted Variable | Correlation with Total | Alpha | Correlation with Total | Alpha |
| POI10 | 0.475390 | 0.626056 | 0.475390 | 0.626056 |
| POI3 | 0.546679 | 0.533622 | 0.546679 | 0.533622 |
| POI9 | 0.481727 | 0.618055 | 0.481727 | 0.618055 |

Cronbach Coefficient Alpha for Factor 3 which included three dimensions of the POI was as follows:

- for RAW variables : 0,686787
- for STANDARDISED variables: 0,686787

TABLE 6.10 DATA ENTERED INTO LISREL

TITLE: CONFIRMATORY FACTOR ANALYSIS OF THE POI

Observed Variables: POI1 POI2 POI3 POI4 POI5 POI6 POI7 POI8 POI9 POI10 POI11 POI12

Correlation matrix:

```

1.00000
0.34500 1.00000
-0.07255 0.41753 1.00000
0.42800 0.69757 0.14957 1.00000
0.35863 0.62232 0.13295 0.29056 1.00000
0.07925 0.52097 0.36102 0.30317 0.28562 1.00000
-0.01415 0.37222 0.43122 0.11022 0.12067 0.24551 1.00000
0.40801 0.63447 0.03246 0.44461 0.32862 0.20133 0.18328 1.00000
0.06059 0.53097 0.45566 0.29605 0.21459 0.20444 0.27944 0.15583 1.00000
0.13387 0.34005 0.44724 0.35446 0.19248 0.16545 0.04560 0.14640 0.36390 1.00000
0.27080 0.58388 0.23342 0.31026 0.50490 0.28322 0.16464 0.38379 0.27575 0.20613 1.00000
0.31973 0.71181 0.02828 0.65871 0.50767 0.29511 0.11290 0.39939 0.23305 0.16032 0.36821 1.00000

```

Sample size = 495

Latent Variables: fact1 fact2 fact3

Relationships:

POI12 POI2 POI4 POI8 POI1 POI5 POI11 = fact1

POI7 POI6 = fact2

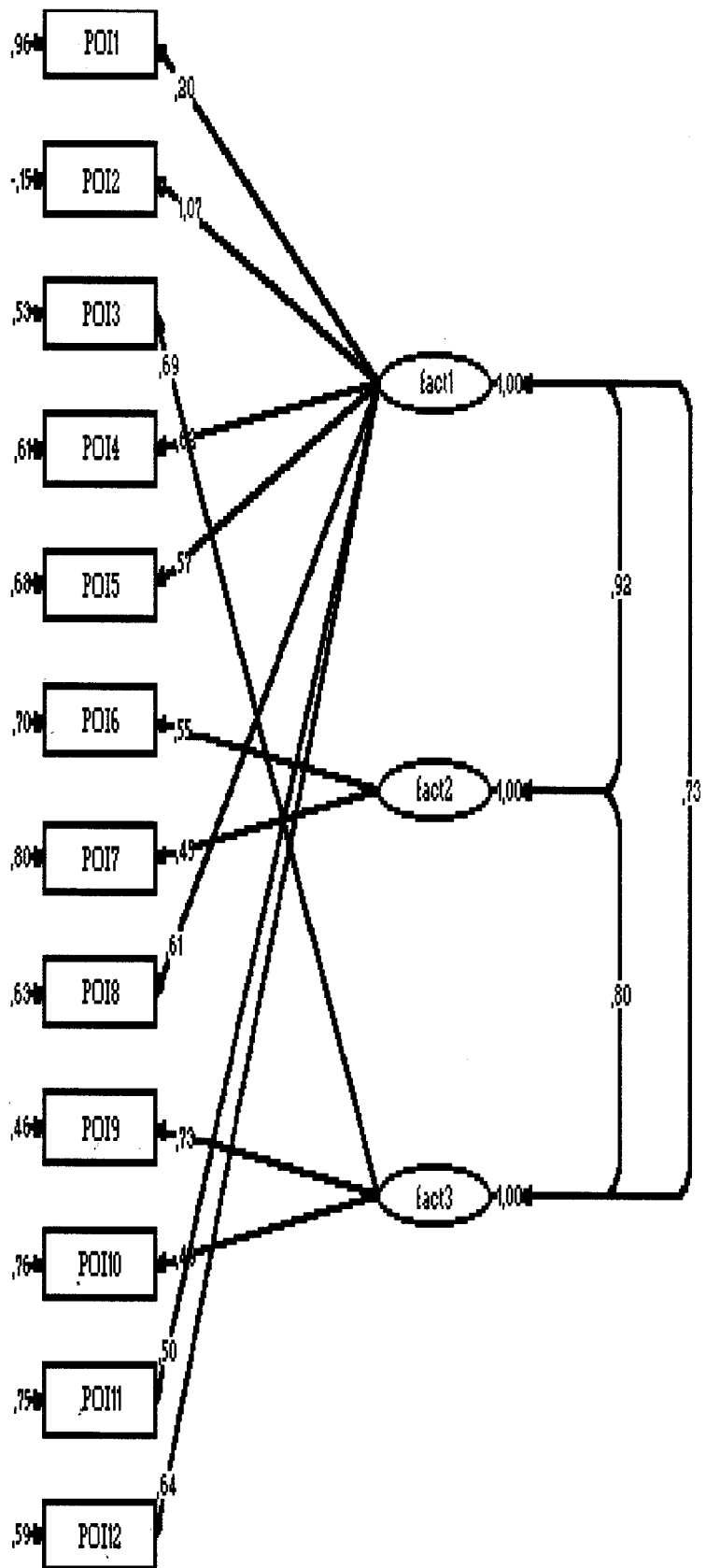
POI10 POI3 POI9 = fact3

path diagram

end of problem

Data was entered into LISREL to conduct a confirmatory Factor Analysis of the POI. From the data in Table 6.10, a Confirmatory Factor Model can be determined.

FIGURE 6.1 A CONFIRMATORY FACTOR MODEL



Factor 1, Factor 2 and Factor 3 can be seen as latent variables. The scores of 0.92, 0.73 and 0.80 illustrate how the factors are meaningfully correlated and relate back to one another. The scores of 1.00 illustrate that each factor is meaningfully correlated back to itself. The parameter estimates (scores to the right of each POI) are internal. Scores to the left of each POI illustrate error variance. These are external factors (factors other than those that were measured).

The following error message occurred: **W A R N I N G**: Error variance is negative. A negative error variance occurred for POI 2. This may be due to parsimonial factors. The inclusion of fewer scales would help satisfy a condition of parsimony within the theoretical framework from which the instrument was derived. As per Tosi and Lindmood (1975, p. 221) the number of subscales could be reduced from a practical interpretive level. There has been clarity of items resulting from paired dichotomies which may draw inappropriate responses to the POI. The item overlaps in the subscales and the lack of parsimony may be seen as one of the POI's most salient deficiencies.

When focusing on goodness-of-fit statistics, one must be aware of the Root Mean Square Error of Approximation (RMSEA). If the RMSEA is less than 0.08, a reasonable fit is indicated. If the RMSEA is less than 0.05, then a good fit is indicated. This research has shown the RMSEA to be 0.17, which is larger than both 0.08 and 0.05. This indicates a poor fit between the theoretical model (Factor 1, Factor 2, Factor 3) and the data (empirical reality). Appendix 1 illustrates the results of the LISREL program.

6.4 HYPOTHESES

The first null hypothesis is accepted as the research could not confirm the theoretical model of the two variables. This research could not identify two factors of self-actualized and not self-actualized. This is because LISREL identified three factors.

The second null hypothesis is also accepted. A negative error variance occurred for one of the 12 factors. The Confirmatory Factor Model illustrated that the correlation on POI2 was negative. Therefore the model of 12 variables could not be confirmed.

6.5 SUMMARY

The general aim of this research was to conduct a Confirmatory Factor Analysis of the POI. Chapter 2 achieved the aim of providing a framework for understanding the concept of self-actualization by identifying the characteristics and the personality profile of the self-actualizing individual. Chapter 3 provided a discussion of various self-actualization measuring instruments by focusing on the POI. Chapter 4 examined the applicability of self-actualization and the POI within industrial psychology. Chapter 5 explained the research methodology on which the empirical study was based. This chapter has now concluded the empirical aim by presenting the results. The integrated results led to conclusions that are presented in the next chapter. Limitations and recommendations are also dealt with in the next chapter.

With reference to the empirical study for this research (1.3.2.), it can be concluded that the specific aims have been addressed.

CHAPTER 7 CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The objective of this chapter is to formulate a conclusion relating to the aims of the research as stated in chapter 1 (1.3). Limitations regarding the research as well as recommendations relating to the literature review and empirical study are discussed.

7.1 CONCLUSIONS

The conclusions are discussed according to the specific aims of the literature review and the empirical study (1.3.2.). With reference to step 6 of the research methodology in section 1.7, the conclusions are as follows:

7.1.1 Conclusions relating to the literature review

7.1.1.1 First aim of the literature review

The first aim of the literature review was to conceptualize self-actualization. This was addressed by explaining the concept of self-actualization and examining the characteristics and personality profile of a self-actualizing individual. Chapter 2 laid the foundation for conducting a Confirmatory Factor Analysis on the POI.

7.1.1.2 Second aim of the literature review

The second aim of the literature review was to formulate arguments for the inclusion of the POI as a measuring instrument of self-actualization. The third chapter illustrated the reliability and validity of the Personal Orientation Inventory (POI) which motivated the use of the POI for this research. It would have an impact to determine the outcome of the Confirmatory Factor Analysis on the POI. This would enable one to determine whether the POI can confirm the theoretical model of self-actualization. The second aim was addressed and answers have been provided.

7.1.1.3 Third aim of the literature review

The third aim of the literature review was addressed by determining the applicability of self-actualization and the POI within industrial psychology. The impact that self-actualization and the POI has on industrial psychology was reviewed by identifying its role within this discipline.

7.1.2 Conclusions relating to the empirical study

7.1.2.1 First aim of the empirical study

The first aim was to determine the outcome of a Confirmatory Factor Analysis of the Personal Orientation Inventory. Correlations between the POI were used as input data for LISREL in order to perform a Confirmatory Factor Analysis. This was used to its full potential in order to measure self-actualization. Thus, one was able to demonstrate a Confirmatory Factor Model.

Previous studies and other samples show the POI to consist of two main scales (factors). These scales are Time Competence and Support Ratio. This empirical study has shown that three factors would be more suitable. Total variance with the use of communality estimates has illustrated that only 5.99% of the data has been measured.

The Confirmatory Factor Analysis concluded that the Root Mean Square Error of Approximation (RMSEA) indicated that there was a poor fit between the theoretical model and the data (empirical reality).

Thus the first aim of the empirical study has been addressed and unexpected answers have been provided.

7.1.2.2 Second aim of the empirical study

The second aim of the empirical study was to formulate conclusions and recommendations for future measurement of self-actualization by means of the POI within industrial psychology. The conclusions have

been formulated and the recommendations will be discussed in section 7.3. Thus the second aim has been addressed.

7.1.3 General conclusion

The literature review proved that the concept of self-actualization is theoretically valid and reliable. However, the POI's factor structure cannot confirm the theoretical model of self-actualization.

The research illustrated that a negative error variance for one of the 12 factors. Thus the model of 12 variables could not be confirmed.

This concludes step six of the research methodology as described in chapter 1, section 1.7.

7.2 LIMITATIONS

The limitations are discussed according to the specific aims of the literature review and the empirical study (1.3.2.). With reference to step 7 of the research methodology in chapter 1 (1.7), the limitations are as follows:

7.2.1 Limitations of the literature review

Although there are updated journal articles, at present there are no recently published books on the study of self-actualization. Therefore, there is limited information available with which the concept of self-actualization can be compared for validity.

Conflicting views exist on the reliability and validity of self-actualization and the POI. Many theorists have written on this subject and expressed their views, doubts and criticisms.

There is a limited amount of literature available on LISREL, described in layman's terms. Information that is currently available is very scientific and very difficult to understand without guidance

from an academic who is familiar with the terms.

7.2.2 Limitations of the empirical study

There was difficulty getting assistance with the use of LISREL due to the unavailability of experts with the knowledge in this area.

The subjects completed the POI in 1995. When the data was analysed, it became apparent that these subjects might need to be retested in order to eliminate biases that arose.

This concludes step seven of the research method in chapter 1, section 1.7.

7.3 RECOMMENDATIONS

Recommendations are discussed according to the specific aims of the literature review and the empirical study (1.3.2.). With reference to step 8 of the research methodology in chapter 1 (1.7) the recommendations are as follows:

7.3.1 Recommendations regarding the literature review

More access to updated theory in journal articles and books is needed for current information in order to ensure the validity of self-actualization in the 1990s.

More information is needed on any research that has been conducted on cross-cultural findings that may be related to the Personal Orientation Inventory.

Articles on LISREL that are less scientific are needed to promote this exciting program. This would make it easier for one to understand and become motivated in order to fully exploit this program.

7.3.2 Recommendations regarding the empirical study

In order to control the biases that occurred in this research, the following recommendations are presented:

7.3.2.1 Cultural Diversity

Different culture groups used for the purpose of this study resulted in cultural diversity which brought about testing biases.

Gobodo (1990, p. 93) attempted to define culture by looking at various theorists' views. Johado (1984) maintained that culture is an elusive term in the vocabulary of the social sciences. Gobodo (1990) used Linton's (1945) definition of culture. Linton defined culture as "the configuration of learned behavior and results of behavior whose components and elements shared and transmitted by the members of a particular society". Thus, there is a continuity of history in the lives of human beings.

Gobodo (1990, p. 45) stated that the lack of precision surrounding the area of cross-cultural psychology in South Africa has resulted in miscommunications and poor diagnoses.

Sumerlin and Bundrick (1996, p. 268) conducted a review of race and self-actualization and discovered that additional research on racial differences in self-actualization is required.

Cross-cultural differences have been identified in this research. One needs to heed the words of Rands and Tracey (1996, p. 324) who suggested that variables should be specified to account for the differences among cultures.

Raanan (1973) and Tulkin (1973) warn about the cultural bias in the current use of the term self-actualization (Ebersole & De Vore, 1995, p. 37).

A way to control testing biases would be to systematically include gender when analysing scale scores (Wise & Davis 1996, p. 324).

As illustrated above, there is current literature available on cultural diversity. This should be taken into account in order to control testing biases in future studies.

7.3.2.2 Standardised instruments

Tosi and Hoffman (1971) believe that, in its present form, the POI does not completely satisfy from a psychometric point of view. Investigations are required to validate the POI in terms of the ability of the component scales differentially to predict theoretically relevant criterion behaviours.

There appeared to be external variables within the sample. Factor analysis should be carried out on monogenous groups. Thus, more measures are needed. Other methods used should include split-half, KR-20 formula and test-retest reliabilities. This study could lead to the establishment of a standardised Personal Orientation Inventory equipped to deal with cultural diversity.

This completes step eight of the research methods in chapter 1, section 1.7.

7.4 SUMMARY

In this chapter, phase 2 of the empirical study (1.7) has been completed. Conclusions (step 6) have been formulated and limitations (step 7) have been discussed. Recommendations (step 8) were discussed according to the literature review and empirical study. This completes phase 2 of the research method.

LIST OF REFERENCES

- Allport, G.W. (1961). *Pattern and growth in personality*. London: Holt, Rinehart & Winston.
- Anastasi, A. (1990). *Psychological Testing* (6th ed.). New York: MacMillan.
- Bartram, D. (1990). *Reliability and Validity*. Berkshire: Nelson.
- Bass, B.M. & Ryterband, E.C. (1979). *Organizational Psychology*. Boston: Allyn and Bacon.
- Bhagyavathy, N.E. (1991). *Growing from within: a study in self actualization*. New Delhi: Prestige Books.
- Brennon, T.P. & Piechowski, M.M. (1991). A developmental framework from self actualization : Evidence from case studies. *Journal of Humanistic Psychology*, 31(3), 43-64.
- Buskist, W. & Gerbing, D.W. (1990). *Psychology : Boundaries and Frontiers*. Illinois: Scott, Foresman & Co.
- Buss, A.R. (1979). Humanistic Psychology as Liberal Ideology. The Social-Historical Roots of Maslow's Theory of Self Actualization. *Journal of Humanistic Psychology*, 19(3), 43-55.
- Byrne, B.M. (1989). *A primer of LISREL: Basic applications and programming for confirmatory factor analytic models*. New York: Springer-Verlag.
- Cartwright, D.S. (1979). *Theories And Models Of Personality*. Iowa, USA: Brown.

Cilliers, F.V.N. (1984). *n' Ontwikkelingsprogram in sensitiewe relasievorming as bestuursdimensie*. Potchefstroom: Potchefstroomse Universiteit.

Cohen, R.J. (1988). *Psychological Testing: An Introduction to Tests and Measurements*. Mountain View, CA: Mayfield.

Daniels, M. (1988). The Myth of Self Actualization. *Journal of Humanistic Psychology*, 28(1), 7-38.

Das, A. (1989). Beyond self actualization. *International Journal for the Advancement of Counselling*, 12(1), 13-27.

De Carvalho, R.J. (1990). A History of "Third Force" in Psychology. *Journal of Humanistic Psychology*, 30(4), 22-44.

Drapela, V.J. (1987). *A review of personality theories*. Springfield, IL: Charles C Thomas.

Ebersole, P. & DeVore, G. (1995). Self actualization, diversity and meaning in life. *Journal of Social Behavior and Personality*, 10(1), 37-51.

Feist, J. (1994). *Theories of Personality* (3rd ed.). New York: Holt, Rinehart & Winston.

Fitts, W.H. & Richard, W.C. (1971). *The self concept, self actualization, and rehabilitation: An overview*. Nashville: Dede Wallace Center.

Fogarty, G.J. (1994). Using the Personal Orientation Inventory to Measure Change in Student Self Actualization. *Personality and Individual Differences*, 17(3), 435-439.

Foulds, M.L. & Warehime, R.G. (1973). Effects of a "fake good" response set on a measure of self actualization. *Journal of Counselling Psychology*, 18, 279-280.

Frick, W.B. (1971). *Humanistic psychology: interviews with Maslow, Murphy and Rogers*. Columbus, OH: Charles E. Merrill.

Geller, L. (1982). The failure of the Self Actualization theory: A Critique of Carl Rogers and Abraham Maslow. *Journal of Humanistic Psychology*, 22(2), 56-73.

Ghiselli, E.E. (1964). *Theory of Psychological Measurement*. New York: McGraw-Hill.

Ginsburg, C. (1984). Toward a Semantic Understanding of Self Actualization: A reply to Leonard Geller. *Journal of Humanistic Psychology*, 24(2), 66-92.

Gobodo, P. (1990). Notions about culture in understanding black psychopathology : Are we trying to raise the dead? *South African Journal of Psychology*, 20(2), 93-98.

Hall, D.T., & Nougaim, K.E. (1968). An Examination of Maslow's Need Hierarchy in an Organizational Setting. *Organizational Behavior and Human Performance*, 3, 12-13.

Harbaugh, T.E. (1993). *A Validation study of the Maslow hierarchy of needs*. Ann Arbor, MI: University Microfilms International.

Hattie, J. (1986). A defense of the Shostrom Personal Orientation Inventory: A rejoinder to Ray. *Personal Individual Difference*, 7(4), 593-594.

Hattie, J., Hancock, P., & Brereton, K. (1984). Relationship Between Two Measures of Self Actualization. *Journal of Personality Assessment*, 48(1), 17-25.

- Hjelle, L.A. & Siegler, D.J. (1976). *Personality theories: Basic assumptions, research and applications*. New York: McGraw-Hill.
- Hjelle, L.A. & Siegler, D.J. (1987). *Personality theories: Basic assumptions, research and applications* (2nd ed.). New York: McGraw-Hill.
- Houts, S.S. & Kassab, C. (1990). Use of LISREL in scale validation. *Psychological Reports*, 67, 1059-1063.
- Howell, D.C. (1989). *Fundamental Statistics for the Behavior Sciences* (2nd ed.). Boston, MA: PWS-Kent.
- Hughes, M.A., Price, R.L. & Marrs, D.W. (1986). Linking Theory Construction and Theory Testing Models with Multiple Indicators of Latent Variables. *Academy of Management Review*, 11(2), 128-144.
- Huysamen, G. K. (1994). *Methodology for the social and behavioral sciences*. Halfway House: Southern.
- Illardi, R.L. & May, W.T. (1968). A Reliability Study of Shostrom's Personal Orientation Inventory. *The Journal of Humanistic Psychology*, 8, 68-72.
- Ivancevich, J.M. & Matteson, M.T. (1993). *Organisational behavior and management* (3rd ed.). Burr Ridge, Ill: Irwin.
- Jones, A. & Crandall, R. (1991). *Handbook of self actualization*. Corte Madera, CA: Select Press.
- Jones, E.A. (1977). *Self actualization and its role in the organization: An exploratory study of the relationship between self actualization, job performance and one's perception of the organizational environment*. Unpublished D.B.A. dissertation. Santa Ana, Calif: Golden Gate University.

- Jöreskog, K.G. & Sörbom, D.A.G. (1988). *LISREL 7 - A guide to the program and application* (2nd ed.). Chicago, Ill: SPSS International.
- Kerlinger, F.N. (1986). *Foundations of behavioral research*. Orlando: Holt, Rinhart, Winston Inc.
- Klavetter, R.E. & Mogar, R.E. (1967). Reliability and internal consistency of a measure of self actualization. *Psychological Reports*, 21, 422-424.
- Knapp, R. (1976). *Handbook For the Personal Orientation Inventory*. San Diego, Calif: Edits.
- Kuhn, T.S. (1970). *The Structure of Scientific Revolutions* (2nd ed.). Chicago: University of Chicago.
- Lester, D. (1971). Maslow and the Possibility of becoming Healthy. *Psychological Reports*, 28, 777-778.
- Lethbridge, D. (1986). A Marxist theory of Self Actualization. *Journal of Humanistic Psychology*, 26(2), 84-103.
- Lichtman, C.M. & Hunt, R.G. (1971). Personality and Organizational Theory: A Review of Some Conceptual Literature. *Psychological Bulletin*, 76(4), 271-294.
- Loehlin, J.C. (1987). *Latent variable models : An introduction to factor, path and structural analysis*. Hillsdale, NJ: Lawrence Erlbaum.
- Long, J.S. (1983). *Covariance Structure Models*. Beverly Hills, Calif: Sage.
- Long, J.S. (1983). *Confirmatory Factor Analysis: A preface to LISREL*. Beverly Hills, Calif: Sage.

- Maddi, S. (1972). *Humanism in Personology*. Chicago: Aldine Atherton.
- Maslow, A. (1962). Notes on being psychology. *Journal of Humanistic Psychology*, 2, 47-71.
- Maslow, A. (1967). A theory of metamotivation: The biological rooting of the value life. *Journal of Humanistic Psychology*, 2, 93-127(b).
- Maslow, A. (1968). *Toward a psychology of being*. Princeton: NJ Van Nostrand.
- Maslow, A.H. (1970). *Motivation and personality* (2nd ed.). New York: Harper & Row.
- Maslow, A.H. (1971). *The further reaches of human nature*. New York: Viking Press.
- Massey, R.F. (1981). *Personality theories comparisons and syntheses*. New York: Litton Educational.
- Mathes, E.W. (1978). Self Actualization, Metavalues and Creativity. *Psychological Reports*, 43(1), 215-222.
- Mathes, E.W. (1981). Maslow's hierarchy of needs as guide for living. *Journal of Humanistic Psychology*, 21(4), 69.
- McCormick, E.J. & Ilgen, D. (1982). *Industrial Psychology*. London: Prentice-Hall.
- McCormick, E.J. & Ilgen, D. (1989). *Industrial and Organizational Psychology*. London: Unwin Hyman.
- Meyer, W.F., Moore, C. & Viljoen, H.G. (1993). *Personality theories: From Freud to Frankl*. Johannesburg: Lexicon.

- Morgan, G. (1980). Paradigms, Metaphors and Puzzle Solving in Organizational Theory. *Administrative Science Quarterly*, 25(4), 605-622.
- Mouton, J. & Marais, H.C. (1994). *Basic concepts in the methodology of the social sciences*. Pretoria: HSRC.
- Olczack, P.V. & Goldman, J.A. (1975). The Relationship between Self Actualization and Psychosocial maturity. *Journal of Clinical Psychology*. 31(3), 415-419.
- Payne, R. (1970). Factor Analysis of a Maslow-type Need Satisfaction Questionnaire. *Personnel Psychology*, 23, 251-268.
- Phillips, W.M., Watkins, J.T. & Noll, G. (1974). Self Actualization, Self Transcendence and Personal Philosophy. *Journal of Humanistic Psychology*, 14(3), 53-73.
- Potkay, C.R. & Allen, B.P. (1986). *Personality : Theory, research and applications*. Monterey, Calif: Brooks/Cole.
- Rands, J. & Tracey, T.J. (1996). Cross-cultural structural equivalence of RIASEC models and measures. *Journal of Counseling Psychology*. 43(3), 310-329.
- Ray, J.J. (1986). Perils in clinical use of the Shostrom POI: A reply to Hattie. *Personal Individual Difference*, 7(4), 591-592.
- Risso, R. & Vinacke, E. (1975). Self actualization. *Journal of Humanistic Psychology*, 15(3), 19-30.
- Robbins, S.P. (1991). *Organizational behavior*. Englewood Cliffs: Prentice-Hall International.
- Robinson, R. (1987). *The mediating effect of organisational climate on personal growth amongst quality circle members*. Cape Town: University of Cape Town.

- Rowan, J. (1983). The real self and mystical experiences. *Journal of Humanistic Psychology*, 23(2), 9-27.
- Ryckman, R., Robbins, M. & Thornton, B. (1988). Psychical Self Efficiency and Actualization. *Journal of Research in Personality*, 19, 288-298.
- Saal, F.E. & Knight, P.A. (1988). *Industrial/Organizational Psychology*. Calif: Wadsworth.
- SAS Institute. (1990). *SAS User's Guide: Statistics*. Cary, NC: SAS Institute.
- Sassoon, J. (1988). *Self Actualization: Theory and Technology*. Pointe Claire, Quebec: Humanica.
- Schott, R.L. (1992). Abraham Maslow, Humanistic Psychology and Organizational Leadership; a Jungian Perspective. *Journal of Humanistic Psychology*, 32(1), 106-120.
- Schultz, D.P. (1977). *Growth Psychology*. NY: Van Nostrand Reinhold.
- Schultz, D. (1990). *Theories Of Personality* (4th ed.). Monterey, Calif: Brooks/Cole.
- Shaw, R. & Colimore, K. (1988). Humanistic Psychology as Ideology - An analysis of Maslow's Contradictions. *Journal of Humanistic Psychology*, 28(3), 51-74.
- Shostrom, E.L. (1974). An Inventory for the Measurement of Self Actualization. *Educational and Psychological Measurement*, 24(2), 207-208.

Smith, S. (1973). On Self Actualization - A Transbivelant Examination of a Focal Theme in Maslow's Psychology. *Journal of Humanistic Psychology*, 13(2), 17-33.

Sumerlin, J.R. & Bundrick, C.M. (1996). Brief Index of Self Actualization: a Measure of Maslow's Model. *Journal of Social Behavior and Personality*, 11(2), 253-271.

Thompson, B. & Daniel, L. (1996). Factor Analytic Evidence for the Construct Validity of Scores: A Historical Overview and some Guidelines. *Educational and Psychological measurement*, 56(2), 197-208.

Tosi, D.J. & Hoffman, S. (1971). A Factor Analysis of the Personal Orientation Inventory. *Journal of Humanistic Psychology*, 11, 86-93.

Tosi, D.J. & Lindamood, C.A. (1975). Measurement of Self Actualization: A Critical Review of the Personal Orientation Inventory. *Journal of Personality Assessment*, 39, 215-224.

Weis, A.S. (1987). Shostrom's Personal Orientation Inventory: Arguments against its Basic Validity. *Personality and Individual Differences*, 8, 895-903.

White, K.M. & Speisman, J.C. (1982). *Research approaches to personality*. Monterey, Calif: Brooks/Cole.

Whitsett, D.A. (1980). *Self Actualization and the Modern Formal Organization*. London: University Microfilms.

Winthrop, H. (1968). Book Reviews. *Journal of Humanistic Psychology*, 8, 89-92.

Wise, G.M. & Davis, J.E. (1975). The Personal Orientation Inventory: Internal Consistency, Stability and Sex Differences. *Psychological Reports*, 36, 847-855.

APPENDIX: LISREL RESULTS

DATE: 7/18/97

TIME: 14:27

WINDOWS L I S R E L 8.10

BY

KARL G JORESKOG AND DAG SORBOM

This program is published exclusively by
Scientific Software International, Inc.

1525 East 53rd Street - Suite 530

Chicago, Illinois 60615, U.S.A.

Voice: (800)247-6113, (312)684-4920, Fax: (312)684-4979

Copyright by Scientific Software International, Inc., 1981-93.

Partial copyright by WATCOM Group, Inc., 1993 and MicroHelp, Inc.,
1993.

Use of this program is subject to the terms specified in the
Universal Copyright Convention.

The following lines were read from file C:\LISREL8W\MYDATA\STONE.SPL:

Title Confirmatory Factor Analysis of the POI

Observed Variables: POI1 POI2 POI3 POI4 POI5 POI6 POI7 POI8 POI9
POI10 POI11 POI12

correlation matrix

| | | | | | | | |
|----------|---------|---------|---------|---------|---------|---------|--|
| 1.00000 | | | | | | | |
| 0.34500 | 1.00000 | | | | | | |
| -0.07255 | 0.41753 | 1.00000 | | | | | |
| 0.42800 | 0.69757 | 0.14957 | 1.00000 | | | | |
| 0.35863 | 0.62232 | 0.13295 | 0.29056 | 1.00000 | | | |
| 0.07925 | 0.52097 | 0.36102 | 0.30317 | 0.28562 | 1.00000 | | |
| -0.01415 | 0.37222 | 0.43122 | 0.11022 | 0.12067 | 0.24551 | 1.00000 | |
| 0.40801 | 0.63447 | 0.03246 | 0.44461 | 0.32862 | 0.20133 | 0.18328 | |
| 1.00000 | | | | | | | |
| 0.06059 | 0.53097 | 0.45566 | 0.29605 | 0.21459 | 0.20444 | 0.27944 | |
| 0.15583 | 1.00000 | | | | | | |
| 0.13387 | 0.34005 | 0.44724 | 0.35446 | 0.19248 | 0.16545 | 0.04560 | |
| 0.14640 | 0.36390 | 1.00000 | | | | | |
| 0.27080 | 0.58388 | 0.23342 | 0.31026 | 0.50490 | 0.28322 | 0.16464 | |
| 0.38379 | 0.27575 | 0.20613 | 1.00000 | | | | |
| 0.31973 | 0.71181 | 0.02828 | 0.65871 | 0.50767 | 0.29511 | 0.11290 | |
| 0.39939 | 0.23305 | 0.16032 | 0.36821 | 1.00000 | | | |

Sample size = 495

Latent Variables: fact1 fact2 fact3

Relationships:

POI12 POI2 POI4 POI8 POI1 POI5 POI11 = fact1

POI7 POI6 = fact2

POI10 POI3 POI9 = fact3

path diagram

end of problem

Sample Size = 495

Confirmatory Factor Analysis of t

CORRELATION MATRIX TO BE ANALYSED

| POI1 | POI2 | POI3 | POI4 | POI5 | POI6 |
|-------|-------|-------|-------|-------|-------|
| ----- | ----- | ----- | ----- | ----- | ----- |
| POI1 | 1.00 | | | | |
| POI2 | 0.34 | 1.00 | | | |
| POI3 | -0.07 | 0.42 | 1.00 | | |
| POI4 | 0.43 | 0.70 | 0.15 | 1.00 | |
| POI5 | 0.36 | 0.62 | 0.13 | 0.29 | 1.00 |
| POI6 | 0.08 | 0.52 | 0.36 | 0.30 | 0.29 |
| | 1.00 | | | | |
| POI7 | -0.01 | 0.37 | 0.43 | 0.11 | 0.12 |
| | 0.25 | | | | |
| POI8 | 0.41 | 0.63 | 0.03 | 0.44 | 0.33 |
| | 0.20 | | | | |
| POI9 | 0.06 | 0.53 | 0.46 | 0.30 | 0.21 |
| | 0.20 | | | | |
| POI10 | 0.13 | 0.34 | 0.45 | 0.35 | 0.19 |
| | 0.17 | | | | |
| POI11 | 0.27 | 0.58 | 0.23 | 0.31 | 0.50 |
| | 0.28 | | | | |
| POI12 | 0.32 | 0.71 | 0.03 | 0.66 | 0.51 |
| | 0.30 | | | | |

CORRELATION MATRIX TO BE ANALYSED

| POI7 | POI8 | POI9 | POI10 | POI11 | POI12 |
|-------|-------|-------|-------|-------|-------|
| ----- | ----- | ----- | ----- | ----- | ----- |
| POI7 | 1.00 | | | | |
| POI8 | 0.18 | 1.00 | | | |
| POI9 | 0.28 | 0.16 | 1.00 | | |
| POI10 | 0.05 | 0.15 | 0.36 | 1.00 | |
| POI11 | 0.16 | 0.38 | 0.28 | 0.21 | 1.00 |
| POI12 | 0.11 | 0.40 | 0.23 | 0.16 | 0.37 |
| | 1.00 | | | | |

Confirmatory Factor Analysis of t

Number of Iterations = 19

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

POI1 = 0.20*fact1, Errorvar.= 0.96 , R² = 0.039
 (0.039) (0.061)
 5.03 15.87

POI2 = 1.07*fact1, Errorvar.= -0.15 , R² = 1.15
 (0.030) (0.013)
 35.95 -10.80

W_A_R_N_I_N_G : Error variance is negative.

POI3 = 0.69*fact3, Errorvar.= 0.53 , R² = 0.47
 (0.044) (0.043)
 15.59 12.16

POI4 = 0.62*fact1, Errorvar.= 0.61 , R² = 0.39
 (0.038) (0.036)
 16.22 17.15

POI5 = 0.57*fact1, Errorvar.= 0.68 , R² = 0.32
 (0.039) (0.040)
 14.63 16.94

POI6 = 0.55*fact2, Errorvar.= 0.70 , R² = 0.30
 (0.056) (0.060)
 9.88 11.61

POI7 = 0.45*fact2, Errorvar.= 0.80 , R² = 0.20
 (0.052) (0.058)
 8.56 13.89

POI8 = 0.61*fact1, Errorvar.= 0.63 , R² = 0.37
 (0.038) (0.037)
 15.82 17.10

POI9 = 0.73*fact3, Errorvar.= 0.46 , R² = 0.54
 (0.044) (0.042)
 16.80 10.94

POI10 = 0.49*fact3, Errorvar.= 0.76 , R² = 0.24
 (0.047) (0.052)
 10.39 14.56

POI11 = 0.50*fact1, Errorvar.= 0.75 , R² = 0.25
 (0.039) (0.045)
 12.90 16.70

POI12 = 0.64*fact1, Errorvar.= 0.59 , R² = 0.41
 (0.038) (0.034)
 16.71 17.21

CORRELATION MATRIX OF INDEPENDENT VARIABLES

| | fact1 | fact2 | fact3 |
|-------|-------------------------|-------------------------|-------|
| fact1 | 1.00 | | |
| fact2 | 0.92 (0.06) 14.53 | 1.00 | |
| fact3 | 0.73 (0.03) 26.31 | 0.80 (0.08) 10.20 | 1.00 |

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 51 DEGREES OF FREEDOM = 752.93 (P = 0.0)

ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 701.93

MINIMUM FIT FUNCTION VALUE = 1.52

POPULATION DISCREPANCY FUNCTION VALUE (F0) = 1.42

ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.17

P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 0.00000024

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 1.63

ECVI FOR SATURATED MODEL = 0.32

ECVI FOR INDEPENDENCE MODEL = 5.99

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 66 DEGREES OF FREEDOM = 2936.34

INDEPENDENCE AIC = 2960.34

MODEL AIC = 806.93

SATURATED AIC = 156.00

INDEPENDENCE CAIC = 3022.80

MODEL CAIC = 947.46

SATURATED CAIC = 561.96

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.11

STANDARDISED RMR = 0.11

GOODNESS OF FIT INDEX (GFI) = 0.80

ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.70

PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.52

NORMED FIT INDEX (NFI) = 0.74

NON-NORMED FIT INDEX (NNFI) = 0.68

PARSIMONY NORMED FIT INDEX (PNFI) = 0.57

COMPARATIVE FIT INDEX (CFI) = 0.76

INCREMENTAL FIT INDEX (IFI) = 0.76

RELATIVE FIT INDEX (RFI) = 0.67

CRITICAL N (CN) = 51.78

CONFIDENCE LIMITS COULD NOT BE COMPUTED DUE TO TOO SMALL P-VALUE FOR
CHI-SQUARE

Confirmatory Factor Analysis of t

SUMMARY STATISTICS FOR FITTED RESIDUALS

SMALLEST FITTED RESIDUAL = -0.29

MEDIAN FITTED RESIDUAL = 0.00

LARGEST FITTED RESIDUAL = 0.31

STEMLEAF PLOT

```
- 2|97
- 1|7765553221110
- 0|977776554444322222110000000000000000
  0|111223333556678
  1|1335799
  2|2569
  3|1
```

SUMMARY STATISTICS FOR STANDARDISED RESIDUALS

SMALLEST STANDARDISED RESIDUAL = -10.20

MEDIAN STANDARDISED RESIDUAL = 0.00

LARGEST STANDARDISED RESIDUAL = 9.24

STEMLEAF PLOT

```

-10|2
- 8|24
- 6|2
- 4|30875533
- 2|95532733000
- 0|999421195553210000000000000000
  0|233679557
  2|234477
  4|23993
  6|1467
  8|362

```

LARGEST NEGATIVE STANDARDISED RESIDUALS

| | | | |
|--------------|-----------|------|--------|
| RESIDUAL FOR | POI3 AND | POI1 | -4.32 |
| RESIDUAL FOR | POI3 AND | POI2 | -10.20 |
| RESIDUAL FOR | POI4 AND | POI3 | -5.04 |
| RESIDUAL FOR | POI5 AND | POI3 | -4.46 |
| RESIDUAL FOR | POI7 AND | POI2 | -6.23 |
| RESIDUAL FOR | POI7 AND | POI4 | -4.31 |
| RESIDUAL FOR | POI7 AND | POI5 | -3.16 |
| RESIDUAL FOR | POI8 AND | POI3 | -8.35 |
| RESIDUAL FOR | POI8 AND | POI6 | -3.27 |
| RESIDUAL FOR | POI9 AND | POI2 | -3.92 |
| RESIDUAL FOR | POI9 AND | POI3 | -4.71 |
| RESIDUAL FOR | POI9 AND | POI5 | -2.67 |
| RESIDUAL FOR | POI9 AND | POI6 | -4.84 |
| RESIDUAL FOR | POI9 AND | POI8 | -5.34 |
| RESIDUAL FOR | POI10 AND | POI7 | -3.52 |
| RESIDUAL FOR | POI12 AND | POI3 | -9.20 |
| RESIDUAL FOR | POI12 AND | POI7 | -4.50 |
| RESIDUAL FOR | POI12 AND | POI9 | -3.53 |

LARGEST POSITIVE STANDARDISED RESIDUALS

| | | | |
|--------------|----------|------|------|
| RESIDUAL FOR | POI2 AND | POI1 | 8.58 |
| RESIDUAL FOR | POI4 AND | POI1 | 8.26 |
| RESIDUAL FOR | POI4 AND | POI2 | 3.72 |
| RESIDUAL FOR | POI5 AND | POI1 | 6.45 |

| | | | |
|--------------|-----------|------|------|
| RESIDUAL FOR | POI7 AND | POI3 | 6.07 |
| RESIDUAL FOR | POI8 AND | POI1 | 7.72 |
| RESIDUAL FOR | POI10 AND | POI3 | 4.88 |
| RESIDUAL FOR | POI10 AND | POI4 | 3.74 |
| RESIDUAL FOR | POI11 AND | POI1 | 4.33 |
| RESIDUAL FOR | POI11 AND | POI2 | 4.19 |
| RESIDUAL FOR | POI11 AND | POI5 | 6.58 |
| RESIDUAL FOR | POI12 AND | POI1 | 5.31 |
| RESIDUAL FOR | POI12 AND | POI2 | 3.43 |
| RESIDUAL FOR | POI12 AND | POI4 | 9.24 |
| RESIDUAL FOR | POI12 AND | POI5 | 4.88 |

THE MODIFICATION INDICES SUGGEST TO ADD THE

| PATH TO | FROM | DECREASE IN CHI-SQUARE | NEW ESTIMATE |
|---------|-------|------------------------|--------------|
| POI2 | fact2 | 191.0 | 2.80 |
| POI2 | fact3 | 132.0 | 0.68 |
| POI4 | fact2 | 11.7 | -0.67 |
| POI5 | fact2 | 15.6 | -0.81 |
| POI5 | fact3 | 16.3 | -0.29 |
| POI8 | fact2 | 65.3 | -1.61 |
| POI8 | fact3 | 68.1 | -0.56 |
| POI9 | fact1 | 42.5 | 0.72 |
| POI9 | fact2 | 24.4 | 0.82 |
| POI10 | fact1 | 16.6 | -0.28 |
| POI10 | fact2 | 22.0 | -0.47 |
| POI12 | fact2 | 55.7 | -1.45 |
| POI12 | fact3 | 57.9 | -0.51 |

THE MODIFICATION INDICES SUGGEST TO ADD AN ERROR COVARIANCE

| BETWEEN | AND | DECREASE IN CHI-SQUARE | NEW ESTIMATE |
|---------|------|------------------------|--------------|
| POI2 | POI1 | 73.6 | -0.15 |
| POI3 | POI1 | 18.6 | -0.15 |
| POI3 | POI2 | 28.7 | 0.08 |
| POI4 | POI1 | 68.3 | 0.27 |
| POI4 | POI2 | 13.9 | -0.08 |
| POI4 | POI3 | 22.8 | -0.13 |
| POI5 | POI1 | 41.6 | 0.22 |
| POI5 | POI3 | 10.9 | -0.09 |
| POI6 | POI3 | 11.4 | 0.11 |
| POI7 | POI2 | 12.3 | 0.07 |
| POI7 | POI3 | 39.2 | 0.21 |
| POI7 | POI4 | 15.0 | -0.12 |
| POI8 | POI1 | 59.6 | 0.25 |
| POI8 | POI3 | 38.3 | -0.17 |
| POI9 | POI2 | 42.9 | 0.10 |
| POI9 | POI3 | 22.2 | -0.22 |
| POI9 | POI6 | 30.8 | -0.18 |
| POI9 | POI8 | 16.6 | -0.11 |
| POI10 | POI1 | 8.7 | 0.12 |
| POI10 | POI2 | 28.2 | -0.07 |
| POI10 | POI3 | 23.8 | 0.17 |
| POI10 | POI4 | 43.4 | 0.19 |
| POI10 | POI7 | 11.2 | -0.12 |
| POI11 | POI1 | 18.8 | 0.16 |
| POI11 | POI2 | 17.6 | -0.08 |
| POI11 | POI5 | 43.3 | 0.20 |
| POI12 | POI1 | 28.1 | 0.17 |
| POI12 | POI2 | 11.8 | -0.08 |
| POI12 | POI3 | 57.6 | -0.20 |
| POI12 | POI4 | 85.4 | 0.24 |
| POI12 | POI5 | 23.8 | 0.13 |
| POI12 | POI7 | 13.8 | -0.11 |

THE PROBLEM USED 18376 BYTES (= 0.2% OF AVAILABLE WORKSPACE)

TIME USED: 1.9 SECONDS